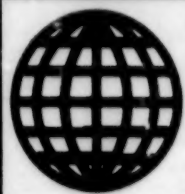


JPRS-TEN-94-003

7 February 1994



**FOREIGN
BROADCAST
INFORMATION
SERVICE**

JPRS Report

Environmental Issues

Environmental Issues

JPRS-TEN-94-003

CONTENTS

7 February 1994

AFRICA

BURKINA

- National Environmental Action Plan Meeting Held 1

ZIMBABWE

- Land Reform Program Said Destroying Natural Forests 1

CHINA

- Article on Environment Protection Successes 2
 Heilongjiang Cracks Down on Trafficking in Rhinoceros Horns 3
 Jiangxi Afforestation Efforts Make Progress 3
 Beijing Ranks Among World Leaders in Gas Geochemistry 3
 Beijing Claims Breakthrough in Afforestation Research 4
 State To Provide Low-Interest Loans for Environment Projects 4
 Canada To Provide Loans To Solve Sulphur Dioxide Problem 5
 Wildlife Official Denies Reports on Tortured Bears 5
 China Faces Ten Ecological Problems 5
 'Roundup' Views Shanghai's Efforts on Improving Environment 6
 Official Environmental Protection Remains 'Arduous Task' 7
 Agency to Bring Pollution 'Basically' Under Control by 2000 7
 Delegate Addresses Buenos Aires Nature Conservation Meeting 8
 Sino-U.S. Joint Venture 'Green' Electronics Plant To Be Built 8

EAST ASIA

BURMA

- Foreign Ministry Issues Press Release on Ozone Protection 9
 Timber Trade Resumes After Malpractice Enquiries 9

HONG KONG

- Officials Criticize U.S. 'Failure' To Release Nuclear Data 10

JAPAN

- Civic Groups Not To Lodge Appeal in Aircraft Noise Case 10
 Environmental, Cooperation Talks With Russia Begin 26 January 11
 Fund To Be Established for Preservation of Tropical Forests 11
 Ministries, Agencies Map Biological Diversity Strategy 11
 Tokyo, Seoul To Discuss Cooperation on Environment 12
 Agreement Reached With Russia on 17 Environmental Projects 12

SOUTH KOREA

- ROK Seeks To Establish Group To Prevent Oil Spills in Asia 13
 Nakdong River Pollution Turns Into Political Issue 13
 Government, Japan To Promote Joint Environmental Projects 14
 Majority of Koreans Willing To Pay More Tax for Environment 14
 Seoul, Tokyo Discuss Reduction of Air Pollutants From China 14

THAILAND

Oil's Sulfur Content to Bring Acid Rain	15
Industrial Estates' Mercury, Lead Pollution	16
Ambassador to Burma Clarifies Impact of Dam Projects	16
Minister Says No More Timber Exports Allowed	17

EAST EUROPE**BOSNIA-HERZEGOVINA**

Reserve General Warns of 'Ecological Bomb' in Tuzla	18
---	----

BULGARIA

Power Engineering Chief Views Nuclear Waste Storage Problem	19
---	----

LATIN AMERICA**ARGENTINA**

World Conservation Summit Concludes	20
---	----

BOLIVIA

Armed Forces Begin Environmental Defense Activities	20
Effect of Coca Cultivation in the Chapare Deplored	21
Study Reveals Need for River Basin Policy	22

BRAZIL

Government Preparing To 'Confront' Environmental Concerns	23
---	----

COLOMBIA

Government Initiates Environment Ministry	24
---	----

ECUADOR

Mangrove Reserves Endangered by Shrimp Industry	24
Indigenous People Seize Energy Ministry, Threaten Oil Wells	26

NEAR EAST/SOUTH ASIA**BANGLADESH**

Foreign Minister Briefs Envoys on Environmental Problems	28
--	----

INDIA

U.S. Antipollution Law on Ships Decried	28
---	----

IRAN

Marine Life Studies in Caspian Sea Planned With Russia	29
--	----

JORDAN

Official Denies Agreement With Israel on Pollution Control	29
--	----

SRI LANKA

Cabinet Ratifies Climate Change Convention	29
'National Forest Conservation Plan' Implemented	29

CENTRAL EURASIA

REGIONAL AFFAIRS

Russia, Central Asian States To Save Aral Sea	30
International Support Pledged for Aral Sea Conference	30
Illegal Trade in Rare Animals, Plants on Rise in Russia, CIS	30

RUSSIA

Official Views Results of Caspian Bioresources Conference	31
Presidential Edict Delimits State Owned Natural Resources	32
New Parliament Urged To Adopt Decree on Nuclear Wastes	33
Joint-American Environment Conference Set for 1994	34
Problems of CBW Destruction Pondered	34
Program Developed To Control Pollution From Rocket Program	35
Energy Ministry Denies Plutonium Dumped in Siberian Lake	36
Japanese Offer of Nuclear Waste Storage Tanker Rejected	36
Khabarovsk Kray Monitoring Background Radiation Changes	36
Linking AES's to Accelerators Offers Safety, Cost Benefits	36
Nuclear Physicists Claim Development of 'Safe' Reactor	37
Fishing Vessels Seal Off Disputed Area in Okhotsk Sea	37
Yablokov at Odds With Environment Minister Over State of Ecology	38
Danilov-Danilyan Examines Key Ecological Issues for Russia	40
Leaked Aircraft Fuel Forms Underground Reservoir	43
Japan Donating Radiation Leak Detection Device	43
Nuclear Waste Processing Plant Being Built on Credit	44
Krasnoyarsk-26 Installation Pollutes Yenisey	44
Mayak Reprocessing Combine Continued Operation Authorized	45
Expert Views Ecology, Plans To Open Toxic Waste Dump	46
Japan 'Whipping up Tensions' Over Waste Dumping Problems	46

BELARUS

Official Analyzes Ecological Situation	47
--	----

GEORGIA

Cabinet Creates Single State System To Monitor Environment	48
--	----

LATVIA

Environmentalists Worry About Radioactive Waste	49
Denmark, Sweden To Help Implement Green Projects	49
Noxious Waste Inspectorate Wants Toxic Waste Laws Amended	50

MOLDOVA

Government Spokesman on Efforts in International Environmental Cooperation	50
--	----

UKRAINE

Demyanov Blamed for Allowing Use of U.S. Chemical 'Harness'	52
Nuclear Experts on START-I Scientific, Ecological Aspects	52
Rivne Scientists Develop Soil Decontamination Procedure	53
Chemical 'Bermuda Triangle' Spells Disaster	53

Minister Cites Lack of Progress on Environment	55
Pollution Caused by Black Sea Fleet Detailed	56
Nuclear Power Stations Record 239 'Accidents' in 1993	59
U.S. Firm To Help Store Nuclear Fuel Waste	60

WEST EUROPE

REGIONAL AFFAIRS

Eureka Funds Joint Rainwater Pollution Monitoring Project	61
---	----

AUSTRIA

European Union Official Stresses Importance of Environmental Protection	61
---	----

FINLAND

Consensus Seen for New Policy To Protect Forest Environment	62
Ministry To Promote Biodiversity in Forests	63
Sale or Use of Asbestos Banned	63
Widespread Minerals Contamination of Drinking Water	64
Industry Leader on Forestry Industry's Environment Role	65
Agreement To Aid Estonia With Oil Spills	66
Worsening Acid Rain Effects in Forests	66

FRANCE

Water Nanofiltration Experiment Implemented	67
---	----

GERMANY

Large Companies Try To Monopolize Trash Market	68
Three German Towns Join Efforts in Environmental Policy	69
Status of Wind Power Generation in Germany Summarized	69
Investment in Wind Generation	69
GDR Documents Reveal New Findings on Seveso	70
Ciliates Used To Detect Toxic Matter	71
Standards for Pesticides in Drinking Water Tightened, Ignored	72
Institutes Improve Solar Cell Efficiency	73

NETHERLANDS

Wind Energy Bureau To Open	73
Energy, Environmental Aid Provided to Bulgaria	73
Authorities Seize French Ship for Polluting Beaches	74
Experimental Water Purification Plant Introduced	74

NORWAY

Toxic Waste From Continent Greatest Threat	75
Prime Minister Defends Whaling Stance	76

SPAIN

Spanish Company Begins Complete Recycling of Cars	77
---	----

UNITED KINGDOM

Development Effect on Environment To Be Studied	77
EC Water Pollution Standards Easing	78
Major Launches 'Green' Action Plan for Environment	79

INTERNATIONAL

Finnish, Norwegian Environment Aid to Russia, Estonia Compared	80
Russian Nuclear Plant To Suffer Without Finnish Spent Fuel	80

BURKINA

National Environmental Action Plan Meeting Held

AB2411216

[Editorial Report] Ouagadougou Radiodiffusion Nationale du Burkina Radio in French at 1300 GMT on 18 January reports that financial backers and government officials met in Ouagadougou on 18 January to discuss the country's national environmental action plan. According to Roch Marc Christian Kaboré, minister of state in charge of finance and planning, the aim of the meeting was to exchange views with partners on the environmental action plan as well as to improve consultations and coordination with cooperation partners for better implementation of the plan. He said the meeting was also intended to make the international community aware of government efforts to establish and implement the national action plan. However, the major objective of the meeting was to mobilize funds for the plan and to serve as a reminder that natural resources are exhaustible and therefore need protection.

ZIMBABWE

Land Reform Program Said Destroying Natural Forests

MB2701201894 Johannesburg SAPA in English
1934 GMT 27 Jan 94

[Text] Harare Jan 27 SAPA—Zimbabwe's land reform programme has brought extensive deforestation on former commercial farms where 54,000 families have been settled since independence in 1980, the ZIANA news agency reported on Thursday. "There was no planning on how the forest resources in these areas would be used," said David Mazambani, manager of the Forestry Extension Services Division of the state-owned Forestry Commission. Figures based on 1988 land satellite images show that thick natural forests with more than 80 percent canopy cover now constitute less than 10 percent of Zimbabwe. Forests were being destroyed to make way for fields, while wood fuel was being used for tobacco curing, burning bricks, household needs and the building of new homes in the resettlement areas. The Forestry Commission has stepped up efforts to make communities aware of the need for sustainable exploitation of forests.

Article on Environment Protection Successes

OW2601053094 Beijing XINHUA Domestic Service
in Chinese 2116 GMT 15 Jan 94

[Article by reporter Zhu Youdi (2612 1635 2769):
"China's Choice in Environmental Protection in 1993"]

[Text] Beijing, 16 Jan (XINHUA)

China's Environmental Protection Achievements Attract Worldwide Attention

China's economy has entered another period of rapid development in the 1990's.

Economic development, population growth, and higher consumption levels mean our country faces the threat of a global environmental problem. Moreover, with the increased degree of development and urbanization, as well as the development of village and town enterprises, environmental pollution and ecological damage accompanying our economic development have increasingly become an important factor actually obstructing our economic and social development.

In 1993, the World Environmental Day meeting and award ceremony for the world's "top 500" were held in Beijing. The event attracted worldwide attention for China's environmental protection.

In environmental protection, China has always been in the front ranks of developing countries.

Many of our achievements have gone down in the history of civilization:

—Ecological agriculture has spread across the country, with the establishment of several thousand ecological agriculture experimental units of various types and size. As early as the beginning of the 1980's, China stopped the production of insecticides with strong poisons and high residue. The agricultural department began experimenting on pollution-free production and made new progress in afforestation on plains and along coastal regions. In particular, the shelter-forest project in the northeast-north-northwest region is known as "the world's best ecological project."

—Success has been achieved in preventing industrial pollution. A large number of industrial pollution control facilities built in our country in the 1980's have successively yielded results, raising the rate of disposal of three wastes [waste gas, waste water, and industrial residue], as well as the up-to-standard rate, remarkably.

—China's urban environmental situation has improved remarkably. As a result of the comprehensive efforts to improve the environment, the environmental quality of many cities has become better to varying degrees. Despite large increases in the urban population and energy consumption, urban atmospheric conditions have basically not worsened and the amount of some

pollutants in the atmosphere have even decreased, thanks to various urban air pollution control measures.

China's environmental protection has unique features, which have attracted the attention of the Third World.

Our Country Still Faces Grim Environmental Protection Prospects At a Time of Rapid Economic Development

According to relevant departments, our country should soberly assess its current status of environment protection, despite its tremendous achievements in preventing and controlling industrial pollution. In the past year, some newly-launched projects, especially "wholly or partly foreign-owned" construction projects in development zones, continued to develop new pollution sources because they failed to strictly implement relevant state regulations mandating environmental impact assessments, and the "simultaneous construction of projects and facilities to control three wastes." Pollution in village and town enterprises worsened with each passing day, and the general level of industrial pollution increased.

In 1992, 36.6 billion tonnes of waste water was released across the country, up 9 percent from 1991; this figure does not cover village and town enterprises. The amount of waste water released last year was significantly higher than that discharged in the preceding year. Although the water quality in the main course of the Chang Jiang is good, pollution is quite serious near the river banks in sections that run through the major cities of Chongqing, Wuhan, Nanjing, and Shanghai. Only 41 percent of the 38,000 km stretches of the seven major rivers and inland rivers subject to water quality tests measure up to first- and second-class water quality standards, whereas 48 percent indicate fairly serious pollution. Surface water pollution is serious in the cities, with the river stretches in 80 percent of the cities suffering varying degrees of pollution. Statistics on 67 cities show that the annual and daily average levels of suspended atmospheric particles in approximately half of those cities exceed the limits. The annual and daily average levels of sulfur dioxide in 13 cities exceed secondary state limits.

Our country's ecological problems also cannot be neglected.

The devastating sandstorm that erupted in the northwest on 5 May 1993 left 85 people dead and 31 missing. Once again, we were given a warning of ecological destruction.

The entire country is suffering from grassland degradation, desertification, salinization, and alkalinization. The illegal occupation and utilization of farmland has yet to be completely halted.

Soil erosion is serious. A recent survey shows that 1.93 million square km [sq km] and 1.88 million sq km of land is affected by water and wind erosion, respectively. A sandstorm danger line totaling 10,000 li has been formed in northwest, north, and northeast China.

Approximately one-third of the country's land is threatened by sandstorms, and more than 60 percent of impoverished counties in our country are concentrated within this line. Economic losses from sandstorms reach 4.5 billion yuan annually.

The Entire Country Was Buffeted by the Environmental Protection Wave in 1993

Last spring, the Eighth National People's Congress [NPC] decided to create an Environmental Protection Committee. Never before had our country set up environmental protection committees under both the government and the NPC.

On 27 May, the State Environmental Protection Bureau released the names of 3,000 key pollution-causing enterprises in an attempt to encourage enterprises to control pollution. Unlike in the past when enterprises were allocated "spots" in order of their output value, profits, and taxes, they were listed according to the amount of effluents. Some of the large and medium enterprises which had previously been considered "efficient" were on the list. The move caused quite a stir throughout the country.

Heilongjiang Cracks Down on Trafficking in Rhinoceros Horns

OW2201065294 Beijing XINHUA Domestic Service
in Chinese 2117 GMT 19 Jan 94

[By reporter Di Jingyao (5049 2529 5069) and correspondent Mou Jingjun (3664 2529 0689)]

[Text] Harbin, 20 Jan (XINHUA)—Heilongjiang Province has firmly implemented the State Council's "Circular on Banning Rhinoceros Horn Trade" and "Circular on Speedily Investigating and Dealing With Illicit Activities of Smuggling and Profiteering in Rhinoceros Horns, Tiger Bones, and Other Endangered Species." Recently, it openly destroyed by burning on the bank of the Songhua River some 50 kg of tiger bones and rhinoceros horns confiscated since last year. This action has been well received in various quarters.

This is the first time China has resorted to burning confiscated rhinoceros horns and tiger bones which were to be resold at a profit. According to people concerned, Heilongjiang's action demonstrates China's seriousness in implementing the "Convention on International Trade in Endangered Species."

Tigers and rhinoceroses are valuable and endangered wildlife that have been categorized as the state's first class key protected animals. Although China does not have rhinoceroses, it has attached great importance to the animal. Since 1981, it has never allowed rhinoceroses to be imported into the country, and has imposed a series of protective measures on tigers within Chinese territory.

Heilongjiang, which has relatively rich resources in wild animals, has all along paid due attention to protection of

wild animals. During the statutory inspection organized by the Environmental Protection Committees under the National People's Congress and the State Council last year, Heilongjiang mobilized more than 3,800 people to carry out inspections in nature reserves, drug stores, pharmaceutical factories, ports, as well as guesthouses, markets, and trade fairs; and it adopted various measures to crack down on smuggling and profiteering in rhinoceros horns, tiger bones, and other rare wildlife; and the measures have had a positive effect on protecting wild animals.

Jiangxi Afforestation Efforts Make Progress

OW2401083594 Beijing XINHUA in English
0816 GMT 24 Jan 94

[Text] Nanchang, January 24 (XINHUA)—The increase rate of forest resources in Jiangxi Province is growing faster than the consumption rate of the resources.

Five years ago there were about 2.6 million ha [hectares] of treeless mountain areas, and soil erosion was getting worse.

To reverse this situation the province set up 490 model tree-planting centers which planted trees on a total area of about 63,000 ha.

The centers were also responsible for popularizing advanced technology, and techniques of transplanting trees and cultivating seedlings.

Now there are more than 13,000 tree-planting units and forest farms in Jiangxi which are responsible for their own profits and losses.

In 1993 the afforested area in the mountain regions of Jiangxi was about 38,000 ha.

Statistics show that from 1989 to 1992 the afforested area in the province amounted to 184,000 ha, and the forest coverage rate in the province rose from 30 percent in 1988 to 40.3 percent in 1992.

Beijing Ranks Among World Leaders in Gas Geochemistry

OW2101110594 Beijing XINHUA in English
0856 GMT 21 Jan 94

[Text] Lanzhou, January 21 (XINHUA)—Chinese scientists have made breakthroughs in the study of gas geochemistry, promoting the country's exploration of oil and gas, and study of the changes of the global climate and environment.

This science, which is only about a decade old, involves research into natural resources, and changes of climate and environment, and forecasting and prevention of geological disasters.

China's key laboratory for gas geochemistry was set up at the Lanzhou Institute of Geology of the Chinese

Academy of Sciences in this capital of northwest China's Gansu Province in 1985. It was opened to foreign scientists in 1991.

Since then, Chinese scientists have made great progress in research into the storage and transformation of oil and gas, changes of global climate and environment, and seismic activities.

Since 1991 the laboratory has completed 792 major research projects designated by the state, related state ministries and Gansu Province.

Chinese scientists at the lab have put forward a new theory of "multi-sources and continuous formation in different stages" for the formation of natural gas.

Meanwhile, they have made new progress in the study of geological structure, volcanoes and earthquakes by using helium isotopes.

They have also developed a series of new technologies and methods for the exploration of oil and gas, which have made great contributions to the development of the Tarim Basin in the Xinjiang Uygur Autonomous Region.

At a state project appraisal meeting, some well-known scholars described the lab as a showcase of China's study of gas geochemistry, calling it an international center of the science.

The lab has academic exchanges and cooperation with many countries and regions, including Germany, the United States, Sweden, Russia, Japan and Italy.

Beijing Claims Breakthrough in Afforestation Research

*OW1401035394 Beijing XINHUA in English
0321 GMT 14 Jan 94*

[Text] Beijing, 14 January (XINHUA)—Chinese researchers have found a new way to raise the survival rate of trees planted on the Loess Plateau.

By retaining water or rainfall storage, the survival rate of trees in semi-arid areas has been raised to about 90 percent from 30 percent.

The new method, developed by researchers from Beijing Forestry University after five years' study, consists of collecting and storage of rainfall and maintaining soil moisture, is able to double or even triple the water available for trees in arid or semi-arid areas.

Arid and semi-arid land accounts for 52.5 percent of China's total territory, and the average tree survival rates were four percent and 30 percent in arid and semi-arid areas respectively.

State To Provide Low-Interest Loans for Environment Projects

*HK1401065494 Beijing CHINA DAILY in English
14 Jan 94 p 1*

[By staff reporter Zhu Baoxia: "State Gives Go-Ahead to Green Foundation"]

[Text] The central government is to set up a foundation to provide low-interest loans to major environmental projects, it was announced yesterday.

The foundation is meant to be a stable source of low-interest finance to fight widespread pollution, with no extra burden on the State budget, said Xie Zhenhua, director of the State Environmental Protection Agency (Sepa).

Xie told an expert meeting in Beijing yesterday that the country's environment had been deteriorating in all but a few places for years.

One of the major factors in the growing problem has been a lack of cash, Xie said.

In the 1980's, the State invested 64.7 billion yuan (about \$11.3 billion at the old exchange rate) on environmental projects, 0.6 percent of gross domestic product over the decade.

Experts say at least 75 billion yuan (\$8.6 billion at the current exchange rate) more is needed in the next six years, if the State is to contain worsening pollution.

Xie stressed the government should be just one source of cash and more channels must be found to guarantee quick, sustainable environmental protection.

The repayable foundation system is one of the more feasible and effective approaches to attract cash, he said.

It aims to provide cash mainly to industrial pollution-control projects which will be repaid from the resulting savings the factories make.

The foundation will be built with cash from the State budget, grants and loans from international organizations, foreign governments and individuals and domestic donations.

Its draft programme being discussed at the expert meeting which ends today suggests a national environmental protection investment company be set up to organize fundraising and loans.

The company, which is subordinate to Sepa, will be responsible for collecting funds, selecting projects and supervising the use of loans.

Priority would be given to cross-province pollution control and environmental projects outlined in international and bilateral agreements.

The company will also invest in pollution-control projects in major State-owned enterprises to set an example for other industries.

Xie said Sepa is set to start pilot environmental projects in 21 provinces and cities, including Beijing, Guangzhou, Liaoning and Heilongjiang.

The national environmental foundation programme was based on an experiment first introduced five years ago in Shenyang, a heavy industry city in Northeast China's Liaoning Province.

Shenyang, with over 5,000 industrial enterprises, has long been one of the country's most seriously-polluted cities.

The Shenyang Environmental Protection Investment Company (Sepic) has loaned 162 million yuan (over \$28 million) to local factories since 1988 to help technical renovation designed to control industrial pollution.

Canada To Provide Loans To Solve Sulphur Dioxide Problem

SK1901053694 Shenyang Liaoning People's Radio Network in Mandarin 2300 GMT 18 Jan 94

[Text] On 18 January, Shenyang Branch of the Communications Bank of China and Shenyang Smeltery held a ceremony in Shenyang to sign the contract on using the comprehensive loans of the Canadian Government. Shenyang Smeltery will use this amount of loans to import acid treatment equipment, which costs \$5.95 million. Through this renovation project, Shenyang Smeltery will thoroughly solve the serious sulphur dioxide pollution.

Wildlife Official Denies Reports on Tortured Bears

OW1201143494 Beijing XINHUA in English 1259 GMT 12 Jan 94

[Text] Beijing, 12 January (XINHUA)—A senior Chinese wildlife official today denied overseas reports that bears in captivity in China are tortured.

Vice-minister of Forestry Shen Maocheng said that reports of torture of bears on a farm in south China's Guangdong Province are partly false and partly rumors.

According to propaganda by an animal welfare fund in Britain and reports by German media, bears on Nanping Bear Farm in Zhuhai Special Economic Zone, Guangdong Province, were not only used to produce bile which was siphoned through a tube from the liver, but also were killed to make food or soup, said the minister.

The reports also estimated that 8,000 bears in China were tortured in that way everyday and China planned to use 40,000 bears for bile production, Shen said.

The minister told XINHUA that there are about 5,000 bears in captivity in China for bile production and China

will not increase the number, since the bile output is enough for traditional Chinese medicine production.

Shen added that "there is indeed a bear with only three paws on the farm, but the lost paw was not cut away by the farm owner."

He added that the three-pawed bear was picked up from the wild and raised by the owner.

Investigations show that the farm was set up without official permission and the illegal farm has been closed, he said.

Under an official regulation issued in 1991 on bear raising, training and breeding, farms without adequate techniques or facilities are not allowed to raise bears.

"It is unreasonable and extremely unfair to ignore China's great efforts to preserve wildlife and its substantial progress by using a single example."

He admitted that some bear farms, which had been run without official permission and were poorly equipped, were shut down last year, indicating that basic requirements for operation include adequate technology and facilities.

"Since the existing authorized farms produce enough bile, no new farm will be allowed to be set up," Shen said.

He said that China cannot agree with the one-sided view by some pure conservationists in the world which emphasizes preservation and opposes any kind of use of animals.

"In that case, all the scientific experiments and research which use animals should not be carried out. Human beings can not use horses and oxen to work and can no longer eat chickens and mutton," the minister said.

He added that "China puts preservation and protection of bear resources first and use of bears second."

According to official estimates, there are tens of thousands of wild bears in China.

"China made great achievements in protecting and preserving endangered wildlife in the past decade and will continue to do so," Shen said. "We welcome well-meaning advice and aid given by all the other countries in the world to join in the effort to preserve wildlife."

China Faces Ten Ecological Problems

94P60076A Shijiazhuang HEBEI RIBAO [ECONOMIC SUPPLEMENT] in Chinese 11 Aug 93 p 1

[Article by Liu Zhaomin [0491 3564 3046]]

[Text] In an alert report "The Ecological Deficit: Future Crisis That Chinese People Have To Fight for Their Surviving," which was compiled by the Chinese Academy of Sciences' Eco-Environmental Research

Center for the State Science and Technology Commission, listed 10 most serious ecological problems China is facing:

- 1) Unproper development and utilization of the mountain and ecology-fragile areas accounting for 65 percent and 9.7 percent respectively of China's territory, has accelerated its large-scale soil erosion and ecological imbalance.
- 2) Increasing catastrophism of natural disasters is expanding areas of damage and environmental deterioration.
- 3) Gradual shrinkage of forested areas caused by overdenudation has turned China into a poor forestation country.
- 4) Unplanned reclamation and long-standing herding have speeded up degeneration of grassland, totally about 1.3 billion mu (20 million mu per year), or about one-third of China's utilizable grassland.
- 5) Desertification is getting serious, for example, in northern China, an area of 1.49 million square kilometers, or 15.5 percent of Chinese territory has desertified.
- 6) Overpumping and overpollution of ground water has brought serious water shortage problem to China.
- 7) Overpopulation, unbalanced distribution of natural resources are also the causes of China's serious environmental problem.
- 8) Air pollution is getting worse, areas damaged by acid rain are expanding, solid waste and human residue are mounting, which means that a foreseeable serious environmental problem will soon follow.
- 9) Forty percent of township enterprises are becoming major polluters, increase in pollution of agriculture and forestry will surely offset the economic growth.
- 10) China has already encountered heavy economic loss caused by environmental deterioration, Chinese people's lives and security of their property are being threatened by the vicious cycle of unexpected accidents.

'Roundup' Views Shanghai's Efforts on Improving Environment

OW3001073694 Beijing XINHUA in English
0651 GMT 30 Jan 94

["Roundup": "Shanghai Strives To Improve Environment"]

[Text] Shanghai, 30 January (XINHUA)—Anyone who revisits Shanghai will be happy to see the daily improved environment here.

Factories discharging heavy pollution in urban areas have been removed or switched to produce pollution-free goods, and the first construction phase of the waste water treatment project on Suzhou Creek across the city has been completed.

Projects completed last year included the expansion of the Zhabei Water Works, construction of the Yangpu Bridge and plantation of lawns and street gardens.

According to Gu Yongkang, an official of the municipal bureau of environmental protection, the rapid economic development will inevitably bring with it pollution problem.

To develop Shanghai—China's biggest economic center—into a world first-class metropolis, with clean, beautiful and comfortable surroundings, the municipal government is spending 23.9 billion yuan, including foreign loans, on environmental protection and urban construction in the 1991-95 period.

Included in this sum is a record 10 billion yuan used in 1993.

"The days are numbered when people smell because of the Suzhou Creek a mile off," said Zhou Yucheng, senior engineer of the Shanghai construction company for treating waste water.

A 33.39-kilometer-long pipe has been laid to carry water from the creek in the urban area directly to the East China Sea after treatment.

"When the whole project is completed," Zhou noted, "it will be able to treat and clean the waste water in the creek for industrial use and irrigating crops."

A survey shows that about 300 industrial enterprises discharging pollution in urban areas had been removed or switched to produce pollution-free goods by the end of 1993 and 300 more are ready for treatment.

"From now on, no factory which does not accord with the demands of environmental protection is allowed to be built in the urban area," said Gu Bochuan, an official of the Shanghai Municipal Economic Commission in Charge of Planning.

"Shanghai will follow the new industrial pattern with focus on the development of pollution-free, high-tech industries including electronics, computer and bio-engineering," he added.

While rearranging the industrial structure, China's most populous city has also vowed to expand green coverage in its limited urban area.

According to a plan of the municipal greening department, Shanghai will build three new parks this year, bringing the total number in the city up to 61, and expand tree belts, lawns and gardens by 93 hectares during this period.

By the end of the year 2000, Shanghai residents will have an average of four square meters of public green areas per capita, up from 1.1 square meters per capita at present.

According to the municipal environmental protection bureau, Shanghai will adopt measures to clean the Huangpu River.

Included are construction of animal droppings treatment projects on the upper reaches of the river, and taking specific measures to prevent and clean industrial pollution.

At present, Shanghai is building a second drinking water source.

Projects whose construction has been completed include the expansion of the Zhabei Water Works, Lingqiao Water works in New Pudong Area, a newly-established economic zone, Yuepu Water Works and the Qingchaosha Reservoir.

Upon completion, a bureau official said, these projects will greatly help improve the drinking water quality of Shanghai residents.

In addition, the city will build a wild animal farm and a tree belt this year.

Huang Ju, mayor of the city, said: "Our purpose is to develop Shanghai into a city with the world's first-grade ecology and modern infrastructure facilities."

More and more people in Shanghai are full of confidence in this aim.

Official Environmental Protection Remains 'Arduous Task'

OW2401133894 Beijing XINHUA in English
1243 GMT 24 Jan 94

[Text] Beijing, January 24 (XINHUA)—In spite of progress in environmental protection, China's environmental pollution remains serious, a leading Chinese environmental official said here today.

Zhang Kunmin, deputy chief of the State Bureau for Environmental Protection (SBEP), said China has set up an effective and efficient environmental protection administrative system during the past decade or more while promoting its economic development.

"China's gross national product (GNP) has doubled during the past decades, but its environment has not deteriorated accordingly, and in some areas environmental pollution has even been reduced," the official said.

Speaking at an international symposium on the environmental protection action plan, Zhang said that it still remains an arduous task for China to create an ideal environment in the coming years because of its huge and growing population and rapidly expanding economy.

According to statistics, China's nearly 1.2 billion population grows by 15 million each year on average, while its cultivated land is shrinking at an average rate of 300,000 ha [hectares] each year. The per capita share of the major resources in China, such as fresh water, cultivated land, forest, grassland and important mineral resources, is much lower than the world's average.

Gao Guangsheng, an official from the State Planning Commission, said that the total amount of standard fuel and metal consumed each year by China will be twice as much as the total consumed by the world in 1970 if China's economy continues to grow rapidly in a traditional development pattern and China's per capita GNP reaches 4,000 U.S. dollars by the mid-21st century.

"Obviously, the traditional development strategy is in no way acceptable to China," said Gao.

He said that China has been paying close attention to the experiences drawn by developed countries and mapped out a strategy for sustainable economic and social development.

In response to the earth summit meeting in Brazil in 1992, China has made up "10 countermeasures on the environment and development," "China's Agenda 21," a strategy for China's sustainable economic and social development in the coming century, and "China's Environmental Protection Action Plan" in the past two years.

"China expects more cooperation with other countries and international institutions in environmental protection since China lacks expertise and investment in those regards," Zhang said.

Also present at the seminar were about 60 environmental experts or officials, including some from Britain, Germany, Denmark, Canada and China, and some foreign diplomats in China.

The four-day seminar was jointly held by SBEP, the State Planning Commission and the State Foreign Experts' Affairs Bureau.

Agency to Bring Pollution 'Basically' Under Control by 2000

OW2501082694 Beijing XINHUA in English
0753 GMT 25 Jan 94

[Text] Beijing, January 25 (XINHUA)—China is putting the final touches to its environmental protection action plan, which aims to bring its worsening environmental pollution basically under control by the year 2000.

Wang Yuqing, director of the Planning Department of the State Environmental Protection Agency, said that China's environmental protection action plan—a ten-year agenda—will contain the general objectives of environmental protection, main targets of pollution control and the protection of the ecological environment in China by the year 2000.

China's economy has doubled during the past 15 years—and is to grow at an estimated 10 percent annually—which has caused an acute shortage of power and increasing energy consumption, 70 percent of it coal.

Speaking at an international seminar on environmental protection action plan, Wang said that China now faces seven pressing environmental problems, including water pollution, air pollution in cities, harmful industrial waste and garbage pollution in cities, lack of water resources, soil erosion, low afforestation percentage and grassland degradation, and decrease of species.

"These environmental problems have greatly affected the health of the people, hindered the improvement of their living standard and economic development," Wang said.

He noted that China will formulate industrial and economic policies for sustainable development, enhance environmental legislation and law enforcement, and improve existing environmental protection agencies.

"As a developing country with limited human, material and financial resources, China will have to set priorities of its environmental protection work," said the official.

He said that China will focus on environmental protection in cities, especially 52 major cities on the government's list for environmental protection, in which the focus should be on the control of water, air, solid waste and noise pollution.

He disclosed that China has selected about 9,000 major polluting enterprises as the targets for pollution control.

As far as the protection of nature is concerned, priority will be given to the protection of biological resources, such as forests, grassland, desert plants, animals and particularly precious and endangered species.

Zhang Kunmin, deputy director of the State Environmental Protection Agency, told the seminar yesterday said that it "still remained an arduous task" for China to create an ideal environment in the coming years because of its huge and growing population and rapidly expanding economy.

Delegate Addresses Buenos Aires Nature Conservation Meeting

OW2501085894 Beijing XINHUA Domestic Service in Chinese 0638 GMT 19 Jan 94

[By reporter Ding Qiang (0002 1730)]

[Text] Buenos Aires, 18 Jan (XINHUA)—The 19th Conference of the International Union of Nature Conservation and Natural Resources held its 101st meeting in Argentina's capital Buenos Aires on 18 January. In his speech at the meeting, Chinese delegate expressed

China's resolute opposition to the union council's decision to admit the so-called "International Tibet Lawyers Committee" as a member of the union.

In his speech, Shen Maocheng, Chinese vice minister of forestry and vice president of the China Wildlife Protection Association, pointed out: The "International Tibet Lawyers Committee" is not a nature conservation organization. The committee's activities are stirring up Tibet independence and splitting China; these activities have nothing to do with Tibet's nature conservation and the protection of Tibet's natural resources. Since the organization was formed in 1989, it has never provided practical aid and support in any form to Tibet's nature conservation.

Shen Maocheng stressed: Tibet has always been an inalienable part of China's sacred territory. China resolutely opposes any foreign forces' activities designed to split China.

The Chinese delegate's speech won support of the delegates of Pakistan and other countries. The meeting's chairman (Lanfar) decided to set up a special committee to investigate the matter and to make a decision on whether or not to admit the "International Tibet Lawyers Committee."

The current international environmental protection meeting, whose theme is to "show concern for the earth and its dwellers," opened in Buenos Aires on 17 January. More than 1,300 delegates from 118 countries are attending the 10-day meeting.

Sino-U.S. Joint Venture 'Green' Electronics Plant To Be Built

94P60077A Beijing RENMIN RIBAO OVERSEAS EDITION in Chinese 20 Dec 93 p 2

[Article by Bian Wen [6708 2429]: "China, U.S. To Jointly Build 'Green' Electronics Plant"]

[Text] China's first "green" electronics plant with an air conditioning and purification system cooled without freon is to be built in Dongwan City, Guangdong Province. Construction for this Sino-U.S. joint venture, called Dongwan-Du Pont Electronic Materials Ltd., will begin in 1994, with operation to begin in 1995. According to the bilateral agreement, Dongwan Southern Electronics Ltd. and Du Pont China Group Ltd. will jointly invest U.S. \$13 million in the new enterprise, including new microcircuit materials fabrication equipment of the type now used in Du Pont's British, U.S., and Japanese plants. By 1995, the joint venture will start manufacturing thick-film circuits and circuit materials and other electronic devices used in automotive and electronic systems, computers, and similar high-tech products. Half of the output is targeted for the international market and half for the domestic market.

BURMA

Foreign Ministry Issues Press Release on Ozone Protection

BK3012032593 Rangoon Radio Burma in Burmese
0130 GMT 30 Dec 93

["Press Release" issued by the Foreign Ministry of the Union of Myanmar [Burma]—dated 30 December 1993]

[Text] The Government of the Union of Myanmar [Burma] has become a party to the following convention and protocol by accession and acceptance on 24 November 1992:

The Vienna Convention for the protection of the ozone layer completed in Vienna on 22 March 1985; Montreal Protocol on Substances that Deplete Ozone Layer completed at Montreal on 16 September 1987; and Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer adjusted at the second meeting of the parties on 29 June 1990.

The Vienna Convention provides a framework containing an agreement in principle to cooperate in protection of the ozone layer and the Montreal Protocol classifies actions to phase out the ozone depleting substances, such as chlorofluorocarbons, CFC, by the end of this century.

As a party to the protocol, Myanmar will be spared from the trade restrictions imposed by the protocol and will be allowed to import controlled substances within a 10-year grace period for limited domestic use for refrigeration and air conditioning.

Additionally, the protocol will provide Myanmar assistance to obtain ozone friendly technology and financial assistance to affect the necessary readjustment. Furthermore, Myanmar's accession to these important instruments underlines its commitment and responsibility to protect the global environment.

Since the establishment of the National Commission for Environmental Affairs in February 1990, the Union of Myanmar signed in June 1992 the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity.

Timber Trade Resumes After Malpractice Enquiries

BK2701013494 Hong Kong AFP in English 0111 GMT
27 Jan 94

[Text] Rangoon, Jan 27 (AFP)—Burma's timber trade, halted during a three-month government probe into malpractice allegations against both entrepreneurs and corrupt officials, has been allowed to resume, officials say.

Local timber merchants contacted by AFP said they still needed clearance, however, from the military commanders with jurisdiction over the areas where timber concessions are located.

Dozens of people were given stiff jail sentences in connection with shady deals uncovered during the investigation by military intelligence, highlighted in the state-owned press.

But local observers noted that prices for timber and wood-based fuel had risen in the wake of the clampdown.

Charcoal, used widely for cooking, now costs more than 500 kyats per basket, or around 12 kyats per pound—almost three times the cost to consumers previously, the observers said.

A would-be house-owner cited a similar rise: "I'm suddenly having to pay for my building material almost triple the prices of just three months ago."

Under a new forest law promulgated in 1992, which strictly limits extraction of timber for commercial purposes, Burma—which owns nearly 75 percent of the world's teak reserves—said it intended to preserve its forest resources.

The law required private timber merchants to apply for official permits through a competitive bidding system which was intended to encourage private sector investment in the industry while curbing illegal logging.

But reports of widespread malpractice involving timber businessmen, abetted by corrupt officials, triggered a sudden halt to logging in November and the official investigation.

Thousands of tons of illicit logs were seized and an unspecified number of smugglers and corrupt government officials were identified.

A recent report in the official New Light of Myanmar cited the example of 11 timber merchants and as many forest department employees who were sentenced this month by a special court in Rangoon to seven years in jail for illegal logging, smuggling and bribery.

The daily said the government had recovered cash and assets which were declared state property.

The money collected paid largely for a state-of-the-art multi-million-dollar international business center on the shores of Rangoon's Inya Lake.

At its recent inauguration, a senior forestry official said the center had cost the state "next to nothing."

"We constructed the building practically cost-free because all the expenses were paid for with fines and penalties slapped on timber merchants, both foreign and local, caught cheating us," he said, adding that the illegal logs confiscated had also gone a long way to defraying the costs.

The official disclosed that one foreign logging company caught red-handed not only had to pay a hefty fine but was charged double for logs already extracted, even though the wood was of the "unreserved species."

Reliable sources said meanwhile that some logging concessions had been given a three-month extension for extraction if companies paid stiff fines and double charges to take out the logs.

HONG KONG

Officials Criticize U.S. 'Failure' To Release Nuclear Data

BK2501041894 Hong Kong AFP in English 0416 GMT 25 Jan 94

[Text] Majuro, Jan 25 (AFP)—Top Marshall Islands government officials have criticised what they say is the failure of the United States to release information about the effects of its nuclear test program here.

Officials said they believed the lack of data had led to inadequate compensation being paid to Marshall Islanders.

In the wake of U.S. Department of Energy (DOE) admissions that U.S. citizens were used as unwitting guinea pigs for nuclear experiments, Foreign Minister Tom Kijiner said Monday that the United States had failed to release full information about its nuclear test program in the Marshalls.

His comments followed a recent medical study confirming that the Marshalls had a rate of thyroid tumours dramatically higher than in other parts of the world.

The study indicated health problems were not confined to the atolls of Rongelap, Utirik, Bikini and Enewetak, which the United States said were the only radiation-exposed areas in the Marshalls.

During the early 1980's, Marshall Islands negotiators sought detailed information about the 66 announced nuclear tests, Kijiner said in an interview.

"But U.S. officials told us there was no further information to provide to us," he said, adding that the U.S. statements had proved to be false.

"The United States wasn't fair to the Marshall Islands during the negotiations (of a treaty known as the Compact of Free Association between the two nations)."

Last month, the DOE released previously classified information about the size of a majority of its nuclear tests in the Marshalls, information Kijiner said the Marshalls first requested more than a year ago.

The foreign minister said the United States released only selected information during the negotiations on the Compact of Free Association so that nuclear compensation would be minimised.

Marshall Islanders had brought lawsuits in U.S. courts seeking about five billion U.S. dollars in compensation for damages from the nuclear tests.

The United States provided a 150 million dollar trust fund to yield about 270 million dollars over 15 years in the compact that was negotiated in the late 1970's and early 1980's.

Marshall Islands Washington ambassador, Wilfred Kendall, said here that the matter of U.S. compensation "needs to be revisited."

He concurred with Kijiner, saying that "all the details (about the nuclear tests) were not on the table during the negotiations."

Their contention is supported by a leading U.S. congressman, California Democrat George Miller who is chairman of the House Committee on Natural Resources.

In a letter to U.S. President Bill Clinton earlier this month, Miller wrote: "This committee has long been concerned that the entire story of the testing done in the Marshalls Islands has not yet been told and that the health and well-being of a significant number of Marshallese may depend on a look at all the facts."

Miller said some Rongelap islanders, who were engulfed in a cloud of radiation from a 1954 hydrogen bomb test at Bikini, have charged that they were used as guinea pigs to further U.S. understanding of the effects of radiation.

"In the light of the recent disclosures regarding actual radiation experimentation in the United States during this period, that possibility cannot be ignored," he wrote.

He called on the Clinton administration to declassify information on the nuclear test program in the Marshalls.

JAPAN

Civic Groups Not To Lodge Appeal in Aircraft Noise Case

OW2301132694 Tokyo KYODO in English 1304 GMT 23 Jan 94

[Text] Tokyo, Jan 23 KYODO—A coalition of civic groups opposed to high noise levels at U.S. military bases in Japan has decided not to appeal a U.S. federal court's dismissal of its original lawsuit last November, coalition representatives said Sunday [23 January].

The representatives of the NEPA [National Environmental Protection Act] coalition filed suit three years ago with a U.S. court calling for environmental impact studies to be undertaken at the U.S. military facilities at Atsugi and Yokosuka in Kanagawa Prefecture and Iwakuni in Yamaguchi Prefecture.

They had called for the study to be ordered in accordance with the National Environmental Protection Act (NEPA), a U.S. law that requires environmental impact studies on federal projects.

But the U.S. federal district court in Washington ruled last November that the plaintiffs lacked legal standing in seeking remedies from U.S. courts. The ruling followed the U.S. Navy counsel's argument that NEPA does not extend to overseas U.S. military operations.

NEPA coalition representatives said the decision was taken because the chances of an appeals court overturning the November ruling appeared dim.

They said the coalition would continue seeking ways to get the U.S. Navy to reduce noise emitted by planes simulating carrier landings and takeoffs at the airfield.

Environmental, Cooperation Talks With Russia Begin 26 January

OW2001082694 Tokyo KYODO in English 7759 GMT 20 Jan 94

[Text] Tokyo, Jan 20 KYODO—Japanese and Russian Government officials will hold talks next week to discuss environmental problems and bilateral cooperation, the Foreign Ministry said Thursday [20 January].

The meeting scheduled for 26-28 January in Tokyo is the first to be held under a treaty on environment protection cooperation agreed upon in 1991 between Japan and the former Soviet Union, the ministry said.

Japanese officials from eight government ministries and agencies, including the Foreign Ministry, Environment Agency, and Health and Welfare Ministry, will attend the meeting, it said.

The Russian delegation includes officials from the Foreign Ministry and Ministry of Environmental Protection and Natural Resources, it said.

The two sides will exchange views on Japanese and Russian environment administration and policies, and how each nation is tackling domestic and global environmental problems, as well as discussing bilateral cooperation, the ministry said.

Fund To Be Established for Preservation of Tropical Forests

OW2101043194 Tokyo KYODO in English 1240 GMT 20 Jan 94

[Text] Tokyo, Jan 21 KYODO—Timber producing and consuming countries have basically agreed to establish a new fund for sustainable management of tropical forests, Japanese Government sources said Friday [21 January].

They reached an accord during negotiations in Geneva to revise the International Tropical Timber Agreement (ITTA).

The new agreement will place more emphasis on preservation of tropical forests than the present accord which came into effect in 1984 and will expire in March this year, the sources said.

Both sides have agreed to specify that trade of tropical timber be from products from forests under sustainable management by the year 2000, the sources said.

Representatives of 36 producing nations such as Indonesia and Malaysia, and 33 consuming countries, including Japan and the United States, have been negotiating in Geneva since January 10 for revising the agreement.

The compromise has been reached as producing nations have withdrawn demand for consuming nations to abide by the same principles of sustainable management for temperate forests on their own land.

In return, consuming nations will be obliged to issue a joint statement on cutting down their own forests, with consideration given to the environment, as well as set up the new fund, the sources said.

Japan, whose imports of tropical forest timber are the world's largest at 15 million cubic meters a year, will be requested to take more responsibility in extending financial aid to developing nations through the fund, the sources said.

The International Tropical Timber Organization (ITTO), which is in charge of keeping the ITTA, is headquartered in Yokohama.

Ministries, Agencies Map Biological Diversity Strategy

OW1201101294 Tokyo KYODO in English 0821 GMT 12 Jan 94

[Text] Tokyo, Jan 12 KYODO—Officials of nine ministries and agencies met Wednesday [12 January] to begin planning Japan's response to the convention on biological diversity, an international legal instrument for the conservation and use of the earth's biological resources.

The coordinating committee will meet regularly to develop a national strategy to maintain biodiversity domestically and overseas.

It will also discuss proposals to take to the first conference of countries which are parties to the treaty scheduled for November.

That conference will consider ways to fund developing countries' efforts to maintain biodiversity as well as consider policy on the transfer of biotechnology.

The treaty, which came into effect last year, was drawn up at the United Nations-sponsored earth summit in Rio de Janeiro in June, 1992. Forty-nine countries have signed the treaty.

Policy measures developed by the committee will be combined with measures adopted at the November conference for incorporation in an overall national strategy by the end of the year.

The treaty covers the protection of endangered species, access to biological resources for commercial use, and the maintenance of the world's species' genetic pool.

Tokyo, Seoul To Discuss Cooperation on Environment

OW1201135494 Tokyo KYODO in English 0852 GMT 12 Jan 94

[Text] Tokyo, Jan 12 KYODO—Japan and South Korea will hold a meeting in Tokyo next Monday to discuss bilateral cooperation to protect the environment, the Foreign Ministry said Wednesday [12 January]

The meeting is the first to be held under a treaty on cooperation to preserve the environment signed between the two countries last June.

Japanese officials from the Foreign Ministry, the Environment Agency, the Science and Technology Agency and the Ministry of International Trade and Industry will attend the meeting, the ministry said.

The South Korean delegation includes officials from the Foreign, Science and Technology and Environment Ministries.

The participants will discuss each nation's environment policies and bilateral and multilateral cooperation on environmental problems, it said.

Japan is expected to propose joint projects including monitoring acid rain, apparently caused by emissions from China, and research on pollution in the Sea of Japan, such as that caused by Russia's dumping of nuclear waste, Japanese officials said.

Tokyo and Seoul will also discuss South Korea's request for Japan to help in the recycling and disposal of industrial waste, the officials said.

The Japan-South Korea accord covers research on acid rain, air pollution, global warming, the preservation of ecosystems and biodiversity.

Under the agreement, the conference will be held annually, alternating between Japan and South Korea.

Agreement Reached With Russia on 17 Environmental Projects

OW2801133094 Tokyo KYODO in English 0938 GMT 28 Jan 94

[Text] Tokyo, Jan 28 KYODO—Japan and Russia have agreed to cooperate on 17 projects on environmental conservation such as joint studies on acid rain and air pollution, Foreign Ministry officials said Friday [28 January]

The two sides reached the agreement during a three-day Japan-Russia joint committee meeting on environmental conservation at the Foreign Ministry, the officials said.

They also agreed to hold a second joint committee meeting in Russia sometime in the first half of 1995 to review the progress of the projects and hammer out new ones, they said.

The meeting in Tokyo was the first to be held based on an accord in 1991 on environmental conservation between Japan and the then Soviet Union.

Moscow and Tokyo had agreed to hold the meeting annually but were unable to because of Russia's domestic situation, the officials said.

Issei Nomura, director general of the ministry's European and Oceanian Affairs Bureau, headed the Japanese delegation.

Officials from the Environment Agency, the Science and Technology Agency, the Ministry of International Trade and Industry and other related ministries also attended.

The Russian side was headed by Yuriy Kazakov, director general of the International Cooperation Bureau of the Ministry of Environmental Protection and Natural Resources.

The joint projects to be conducted in 1994 and 1995 include joint studies on acid rain, the quality of water of Lake Baikal, the environment of the Sea of Japan, and observation of the greenhouse effect in Siberia.

The program also includes joint observation of methane gas from frozen land regions and exchange of information to prevent air pollution in both countries, the officials said.

Also during the meeting, the two sides discussed each nation's administration and policies concerning environment, as well as domestic and global environmental problems, they said.

Specifically, they discussed air and water pollution, disposal of wastes, global warming, and protection of biodiversity and the ozone layer, the officials said.

The two sides did not discuss Russia's dumping of nuclear waste into the Sea of Japan since it was not on the agenda, they said.

The Japanese and Russian officials agreed that cooperation between the two nations is important for environmental preservation and that cooperation in the field could contribute to the improvement of bilateral relations as a whole, the officials said.

SOUTH KOREA

ROK Seeks To Establish Group To Prevent Oil Spills in Asia

SK1001102894 Seoul MAEIL KYONGJE SINMUN
in Korean 10 Jan 94 p 2

[Text] In preparation for the possibility of a large-scale oil spill in the territorial waters off the Korean peninsula as a result of the increasing amount of oil transport via the sea, the government has decided to make efforts to establish a Northeast Asian cooperative system to prevent ocean pollution. These Asian countries include the ROK, North Korea, Japan, China, and Russia.

The relevant ministries, including the Ministries of Foreign Affairs and Environment and the Korea Maritime and Port Administration, said on 9 January that for this end, the government would participate in the Northwest-Pacific Ocean protection program, a regional cooperative system jointly led by the UN Environment Program and International Maritime Organization, and that it is positively considering signing an agreement to prevent ocean pollution.

Accordingly, the government will participate in a meeting of the program led by those five countries. This meeting is scheduled to be held in May for the first time. In the meeting, the government will ask other participating countries to establish a comprehensive information management system regarding the maritime environment in the Northwest-Pacific region, including the East Sea and the Yellow Sea, and to formulate an inter-state cooperative plan to prepare for a large-scale oil spill. It will give a high priority to this project.

Also, the government will hold the first working-level contact with Japan in Tokyo next month and mainly discuss plans to cooperate with Japan to prevent oil spills. The discussions will include "the conclusion of an agreement, the exchange of technology and information, and the exchange of manpower and equipment between the ROK and Japan for the prevention of ocean pollution" in case there is a large-scale oil spill on the waters.

Naktong River Pollution Turns Into Political Issue

SK1401100694 Seoul YONHAP in English 0722 GMT
14 Jan 94

[Text] Seoul, Jan 14 (YONHAP)—Just when the country appeared to have run out of hot political issues, drinking water contaminated with cancer-causing chemicals gushed out of faucets in households in Pusan and other cities along the Naktong River, making big waves among government leaders and politicians.

President Kim Yong-sam promised Friday that his administration will work out short- and long-term measures to clean up the country's water resources so that all citizens are able to drink safe and clean water.

"Government officials should not just follow the inertia of the past administrations, but tell environmental and health problems to the citizenry," he said, apparently blaming previous administrations for today's water pollution.

The people, for their part, should actively contribute to national efforts to clean up water resources by not dumping garbage and liquid waste into rivers, Kim said.

Ruling and opposition parties, meanwhile, hastily dispatched fact-finding missions to South Kyongsang Province while forming party committees to debate the problem.

They sharply criticized the administration for leaving the state of pollution in the Naktong River as it is today.

Both the ruling Democratic Liberal Party [DLP] and main opposition Democratic Party [DP] failed, however, to come up with any suggestion or alternative action for the administration to take immediately.

It was the stench emanating from the tap water in homes in Pusan and other cities in lower South Kyongsang Province, and complaints by citizens that alerted government officials to look into the woeful state of pollution of the Naktong River earlier this week.

Showing the situation to be even worse than feared, government officials announced Thursday that they had found traces of cancer-causing benzene and other chemicals in the Naktong River, from which tap water is drawn, raising grave concern among people in the area.

The parties have decided that the National Assembly Health and Social Affairs Committee will hold a hearing Saturday to grill the responsible government officials and try to work out measures to clean up the mess.

The DLP convened an unscheduled meeting of party postholders Friday morning and discussed the problem but could not make any concrete suggestion to the government.

"I have nothing to announce," DLP spokesman Ha Sun-pong said after the meeting. "We just exchanged our concerns."

"Right now, the administration is working on measures among the ministries concerned," he said. "The party will make an overall and comprehensive action plan after listening to them."

DLP Secretary-general Mun Chong-su acknowledged that the government and ruling party should have done something about the Naktong River pollution three years ago, when an industrial company was caught dumping phenol into the river.

The DLP is resolved, he said, to support the government in its efforts to clean up pollution not only in the Naktong but all the rivers in the country.

The Democratic Party, calling the Nakdong River pollution the worst man-made disaster in the nation's history, demanded that the government take fundamental action.

"Some 10 million people in southern South Kyongsang Province have been drinking water contaminated by cancer-causing chemicals," DP spokesman Pak Chi-won said.

"The government should trace those responsible for the contamination and arrest them immediately while making efforts to prevent further pollution," he said.

DP members of the Health and Social Affairs Committee will use the findings of a party investigation team sent down to the area Thursday in questioning government officials.

The opposition party, taking the position that the Nakdong River "disaster" is a direct result of a lack of government environmental measures and lack of supervision, pressed again its demand for an extraordinary assembly session in January.

Government, Japan To Promote Joint Environmental Projects

SK1801103694 Seoul YONHAP in English 1019 GMT 18 Jan 94

[Text] Seoul, Jan 18 (YONHAP)—South Korea and Japan have decided to undertake 31 cooperative projects in the environmental area, the Foreign Ministry reported on Tuesday.

A Ministry official said the decision was made at the first Korea-Japan joint environmental cooperation committee meeting held in Tokyo on Monday.

South Korean delegates asked Japan at the meeting to promote, among others, the exchange of water preservation experts, and Japan promised to favorably review it.

The two sides also agreed on the need for Northeast Asian countries to promote closer environmental cooperation in the region.

The Korean delegation to the Tokyo meeting was led by Yi Tae-sik, Foreign Ministry's deputy director-general for international economy.

Majority of Koreans Willing To Pay More Tax for Environment

SK1901112194 Seoul YONHAP in English 0946 GMT 19 Jan 94

[Text] Seoul, Jan 19 (YONHAP)—Seven in ten South Koreans are willing to pay an additional tax for the better preservation of environment, a recent opinion poll showed on Wednesday.

A survey held by Tongso Research Institute in a contract awarded by the Daewoo Economic Institute revealed

that 70.1 percent of the total respondents said they were willing to pay a new environment-related tax.

The poll was taken for three months beginning August last year toward 10,463 persons aged 18 or older in six major cities and seven provinces across the country.

Of the total pollees, 51.1 percent or 3,747 persons said they could pay 4,000 won or less a year for the preservation of environment, 29.3 percent (2,149 persons) 5,000 to 9,000 won, 16.5 percent (1,209 persons) 10,000 to 40,000 won, 2.2 percent (106 persons) 50,000 to 90,000 won, and 1 percent (69 persons) more than 100,000 won.

By sex, 71.9 percent of all male respondents showed willingness to pay an environmental tax. When it came to women, the percentage was 68.5 percent, the poll showed.

Seoul, Tokyo Discuss Reduction of Air Pollutants From China

SK1201083694 Seoul YONHAP in English 0800 GMT 12 Jan 94

[Report by Kim Tae-yong]

[Text] Seoul, Jan 12 (YONHAP)—South Korea and Japan are studying ways to cope with acid rain and sulfuric acid gas coming on the wind from China, and this issue will be on the agenda when the Korea-Japan joint committee on environmental cooperation meets 17 January in Tokyo.

Foreign and domestic studies show that airborne pollutants from China account for 30 percent to 50 percent of the acid rain that falls upon Korea and Japan, and Seoul signed environmental protection pacts with Tokyo and Beijing in June and October last year, respectively, to improve environmental cooperation with its neighbors.

No Chae-sik, president of the Korea Environmental Technology Research Institute, has proposed to President Kim Yong-sam that there be strict examination of pollutants from China as research by domestic and foreign scholars shows that China accounts for 30 percent of Korea's air pollution.

Sim Shang-ku, senior research scientist of the Environment Research Center in the Korea Institute of Science and Technology (KIST), says recent research by Japan's Central Research Institute for Electric Power Industries shows that at least 50 percent of the materials causing acid rain in Japan are from China.

The Japanese institute published the results of its research on Chinese pollutants in November 1992. It traced the roots of sulfured ions, which cause acid rain, observed at 20 measuring points in Japan and found that 50 percent of the ions were from China, 15 percent from South Korea and the remainder from Japan.

Professor Kim Chong-uk of Seoul National University's Graduate School of Environmental Study said in a paper last year that the sulfurous acid gas produced in Beijing and two other cities and 14 provinces on China's east coast has a great effect on the Korean peninsula.

"About 92 percent of the sulfurous acid gas from China becomes acid rain while the remaining 8 percent affects the earth in the form of gas," he wrote. "Shandong and Liaoning Provinces, where factories are clustered, especially affect this peninsula very much."

If the wind blows from China, the acidity of the rain falling on Paengnyong island off the west coast reaches PH 5.0, he said.

South Korea is studying exactly how much sulfurous acid gas and acid rain is coming from China, and how much damage they cause.

Seeking precise data, the National Institute of Environmental Research will begin a three-year examination of air pollutants blown from China and acid rain, using planes, from spring. [sentence as received]

Professor Yi Kyong-chaee of Seoul City University says that acid rain appeared only in Seoul and some industrial areas until three to four years ago. But these days, acid rain also falls in rural areas, including Kwangneung in Kyonggi Province and west Kangwon Province.

"Unless the government devises countermeasures against acid rain caused by pollutants coming from China as soon as possible, most of South Korea's pine trees will suffer irreparable damage," Yi says.

The reason for China's acid rain is that 76 percent of its total energy comes from burning coal, which contains a lot of sulfur. In 1991, China discharged 16.22 million tons of sulfurous acid gas into the atmosphere, about 15 times as much as South Korea.

China made rapid economic progress in 1992 and 1993, and the consumption of coal, of which it has an enormous amount, soared.

Seoul National University's Graduate School of Environmental Study expects that until 2022, when China's per capita gross national product (GNP) will reach 4,000 U.S. dollars, the amount of sulfurous acid gas will keep increasing.

In contrast, the sulfurous acid gas generated in Korea has been dropping since 1990, when desulfurization facilities and clean energy were introduced by industry.

As time passes, the damage Korea suffers from Chinese pollution will grow, according to researchers.

To reduce the pollution from China, the Environment Ministry has held three Northeast Asian environment conferences, but China appears reluctant to do anything

about its emissions lest economic growth suffer and says that it lacks the capital and technology to deal with the problem.

In Europe, where 50 percent of airborne pollutants migrate across national boundaries, 33 countries signed the convention on transboundary air pollutants in 1979.

Canada and the United States concluded an agreement to sharply reduce air pollutants causing acid rain in 1990.

THAILAND

Oil's Sulfur Content to Bring Acid Rain

94WN0101A Bangkok THAN SETTHAKIT in Thai
28-30 Oct 93 pp 1,23

[Excerpt] [Passage omitted] Because of the report of "acid rain" in Samut Prakan Province, which lies next to Bangkok, there has been broad interest and many requests for more information from our readers. THAN SETTHAKIT correspondents have reported on the progress of this situation, and a source in the Office of the National Commission for Energy Policy (SPCh) revealed that a check on large factories in Samut Prakan indicated that many used furnace oil with 3.5 percent sulfur. This was thought to be the cause for the "acid rain" problem. In addition to the Phra Nakhon Tai [South Bangkok] electrical plant, it was found that there were 37 factories out of the approximately 3,000 in Samut Prakan which released from 21.6 tons per year to 1,720 tons per year of sulfur dioxide. The trend was for these factories to release more sulfur dioxide every year.

"Those in industry still do not feel that it is important to deal with acid rain and are not prepared to switch from high- to low sulfur furnace oil. They generally claim that it would increase costs. Therefore we will probably need some procedure to induce these factories to change so that the problem can be solved," the source felt.

The same source said that at present the government did not have any procedures to compel them to reduce sulfur dioxide emissions. And the standard for sulfur dioxide of 300 micrograms per cubic meter was a standard for testing the atmosphere. No procedure had been specified for measuring the release of sulfur dioxide by individual facilities. Also, there was no procedure for punishing violators. These were the problems which made it difficult to avoid pollution.

As for the 37 large factories mentioned, these were generally in heavy industry and included the Thai-Asahi Glass Factory, the Ajinomoto MSG Factory, the Krungthep Steel Factory, Thai Phatana Steel, as well as paper mills and textile factories. Mr. Prasert Bunsamphan, the Deputy Director of the Petroleum Authority of Thailand (PTT), made an interesting point. At the beginning of last October the PTT had signed a contract to sell 3,600 million liters of furnace oil with a sulfur content of 3.5 percent to the Electricity Generating Authority of

Thailand (EGAT) over 3 years for about 10,400 million baht to supply the Phranakhon Tai electrical plant and the Bang Pakong electrical plant. This was in addition to the 28,955 million liters normally supplied to the KFPPh.

According to the signed contract, the PTT is to bring in furnace oil with 3.5 percent sulfur content but may substitute furnace oil with less sulfur for an additional 30 to 35 satang per liter if EGAT is willing to use it. This could increase the price of electricity by 1 to 1.5 satang per unit. When one calculates the increase in expense and considers that the government does not have any policy of supporting this through reduced import duties for low-sulfur furnace oil, then one can see that this might be very difficult for EGAT.

At present the Phra Nakhon Tai electrical plant and the Phra Nakhon Neua [North Bangkok] electrical plant use 2,600 million liters per year of 3.5 percent sulfur furnace oil. The factories in Bangkok and Samut Prakan use 1,300 million liters per year. In the past the PTT imported 50 million liters of 2 percent sulfur furnace oil for the Phra Nakhon Tai electrical plant. This apparently created a burden inasmuch as the price was higher than the contracted price. If the government adopted measures to compel factories in both Bangkok and Samut Prakan to use low-sulfur oil, this burden would disappear because they would be able to shift the burden of the price of the furnace oil which met standards onto the factories instead.

"If EGAT should import low-sulfur furnace oil, although it might appear that all the burden was shifted to it or the factories, in fact in the past the price of 3 percent sulfur furnace oil has been higher: U.S.\$15 to U.S.\$17 per barrel—whereas now the price has dropped to only U.S.\$11 to U.S.\$12 per barrel. If 2 percent sulfur furnace oil were imported, the investment would be 30 to 35 satang per liter higher, but this would still be lower than when the price of furnace oil was high as in the past," Mr. Prasoet said.

The EGAT deputy director also said that the Commission for Considering a National Energy Policy, chaired by Dr. Sawit Phothiwihok, minister attached to the Prime Minister's Office, was considering making an announcement compelling factories both in Bangkok and Samut Prakan to use low-sulfur oil with 2 percent sulfur. But there was still the problem that many factories were not willing to use it. Nevertheless the announcement is expected this November.

Mr. Yothin Tanthansakun, the Director of the Division for Safety and the Environment of the Toyota Motor Company (Thailand) Ltd., offered information worth following up on: if Samut Prakan pollution damages the finish of the company's already assembled cars this season, the company would correct this by applying wax to prevent corrosion. To be sure about this, he said that "Toyota officials are checking to see if acid rain is causing this damage."

Industrial Estates' Mercury, Lead Pollution

94WN0101B Bangkok MATICHON in Thai 21 Nov 93
p 8

[Text] The Department of Medical Sciences has checked and found toxic chemicals, including both lead and mercury, polluting the water in the area of the industrial estates.

Dr. Panya Sonkhom, the Director of the Department of Medical Sciences of the Ministry of Public Health, said that 116 water samples had been taken from the waterways which pass by the various factories in the Mapta-phut and Laemchabang Industrial Estates and flow close to populated areas. The samples had been taken each month for 14 months [sic] from March 1991 to February 1992. They were analyzed for toxic chemicals which would be dangerous to the health of the people in these watersheds. The analysis did not find any PCB's in any of the samples, but lead was found in 37 of the samples or 31.7 percent, and mercury was found in 19 of the samples or 16.4 percent.

Dr. Panya said that among the samples in which lead and mercury were found, there were samples which exceeded the standard for the maximum level allowed for waste water, namely, there was one sample with lead over 20 micrograms per deciliter, and there was one sample with mercury over 0.5 micrograms per liter. Even though this survey did not find any PCB's, a cancer causing substance, and found lead and mercury which exceeded the standards set in only one sample each, nevertheless the department would continue to check for toxic chemicals in the environment, and it had requested assistance on a continuing basis from other units involved to help keep track of environmental pollution in order to support the development of the eastern seaboard and to avoid health hazards for the people in this area in the future.

Ambassador to Burma Clarifies Impact of Dam Projects

BK2801011394 Bangkok THE NATION in English
28 Jan 94 p A6

[Text] [Letter from the Thai Ambassador to Burma, Wirasak Futrakun]

I have read the editorial column entitled, "Burma [Myanmar] dams are clearly a crime against humanity," that appeared in THE NATION on 15 November 1993 with deep concern that your distinguished newspaper might not have been correctly informed about the hydro-electric projects along the Thai-Myanmar borders. As someone who knows something about these projects, I would like to clarify the status of these projects in order to allay some of your anxiety as follows:

1. It is true that seven projects have been identified for possible cooperation between Thailand and Myanmar since hydro-power is clean and renewable comparing to other sources of energy such as nuclear reactors or coals. It is not true that feasibility studies for seven of these

projects have already been carried out. So far, only one feasibility study has been carried out.

2. At present, there exists no agreement between Thailand and Myanmar regarding the construction of the Salwin hydro-electric project. The decision to go ahead with the construction of this project must await a feasibility study which will take a few years and will include as part and parcel of the feasibility study an environmental impact assessment. Even now, there exists no agreement between the two countries on the implementation of a feasibility study of this project.

3. If and when there is a mutual agreement between Thailand and Myanmar regarding the Salwin hydroelectric project, the aforementioned environmental impact assessment will definitely take into consideration any impacts on the peoples living along that river, be they Karens, Shans, Paos, Was and many other ethnic groups. The dams, should they be built, may not even be located in the areas where some of the Karens are living along the Thai-Myanmar borders since there are several possible sites along this long river.

4. The present Government of the Union of Myanmar is just as environmentally conscious as the Thai Government. The decision of the Government of the Union of Myanmar to terminate timber concessions along the Thai-Myanmar border is based on its concern to conserve the forests along the border which happen also to be watersheds for several of Thailand's own rivers. Although this decision has caused pain to many Thai logging companies, the Government of Myanmar also sacrifice revenues of more than two hundred million dollars per year in order to conserve these forests. We should respect their decision and should realize that a government that is willing to sacrifice such large revenues given its relatively small foreign exchange reserves for the sake of preserving its environment is unlikely to agree to any hydroelectric projects without undertaking prior environmental impact assessment and securing environmental safeguards.

5. As for the Karens living along the Thai-Myanmar borders, their fate is not limited to being, as THE NATION puts it, "forced into making a terrible choice between living in Slorc [State Law and Order Restoration Council] concentration camps or Thai refugee camps." First of all, there are more Karens living in other parts of Myanmar such as the Ayeyarwaddy Division than along the Thai-Myanmar border and they are living not in "concentration camps" but in towns and villages similar to other 135 ethnic groups that comprise the people of Myanmar. Second, they can enter into negotiations with the Government of the Union of Myanmar as other ethnic groups such as the Kachins, the Was and the Kokangs have done so successfully in securing their autonomous areas and their ways of life. I sincerely hope that they will choose this option of negotiations instead of prolonging the war that has gone on nearly half a century, and has already brought about three or four lost generations of Karens, who could have been devoting themselves to develop the Karen State in the framework of the Union of Myanmar.

It is in Thailand's interest that there be national reconciliation with dignity among all the ethnic groups in Myanmar because a peaceful and prosperous Myanmar will be the best possible neighbour for Thailand.

Minister Says No More Timber Exports Allowed

*BK3101094494 Hanoi Voice of Vietnam in English
1000 GMT 28 Jan 94*

[Text] Vietnam this year aims not to export wood in exchange for hard currency. It is trying to prevent further loss of forest cover. Minister of Forestry Nguyen Quang Ha recalled recent instructions by the prime minister banning the export of semi-finished materials intensive wood products. [sentence as heard] The minister also said the government might import wood in the years to come to boost local processing; this needs to be effectively administered and not to be an excuse for further deforestation.

BOSNIA-HERZEGOVINA

Reserve General Warns of 'Ecological Bomb' in Tuzla

AU2401114994 Zagreb VECERNJI LIST
in Serbo-Croatian 21 Jan 94 p 7

[Interview with Professor Dr. Zlatko Binenfeld, reserve Croatian Army general and adviser to Croatian Defense Minister, by Mate Piskor: "Tuzla and Vitez Are Ecological Bombs"]

[Excerpts] Reporting from the fronts in Croatia and later also from those in Bosnia-Herzegovina, the Croatian media on numerous occasions has alleged that the Serbian and the Muslim forces have been using chemical agents banned since 1925 by international convention. However, there has been very little credible evidence and this has been the reason why the Croatian Army so far has not openly reported it, stresses Professor Dr. Zlatko Binenfeld, reserve general of the Croatian Army and the defense minister's adviser for research and military-technical development.

Piskor: General, your lecture on the application of chemical warfare in the clashes in the former Yugoslavia, which was given at Croatian Defense Ministry last week, has perplexed the public. Why did you present it to the public in such a shocking way and why only now?

Binenfeld: You see, I am a scientist and I always insist that each claim must be supported by the appropriate evidence. There had been no material evidence for the use of chemical agents in Croatia even though there was much talk about it. We have the evidence now and we are presenting it to the public. This involves an Oganj rocket filled with the CS [chlorobenzamalonitrile] chemical agent, which landed near Pokupski a year and a half ago and a hand grenade filled with the same chemical agent that was recently found near Zadar.

Shocking Information

Piskor: You have stated that the former Yugoslav National Army has approximately 100 tonnes of CS at its disposal. How great a danger does this represent?

Binenfeld: Before I give a specific answer, I must explain something. I have been studying the problems of protection from chemical agents for 42 years. I have lectured at the Military Medical Academy and the Military Technical Faculty in Zagreb, I was an adviser to the former Yugoslav Government on the Disarmament Committee in Geneva, and a participant and lecturer at numerous international conventions on the use of and protection from chemical agents. Despite this, I did not know what the Yugoslav National Army was manufacturing in Bijelo Polje near Mostar. I thought that that they were manufacturing quantities of chemical agents that were only sufficient for protection tests, but in fact they manufactured large quantities. General Tus, the commander of the air force of the former Yugoslav National

Army in Mostar, was not informed either, and not even the omniscient CIA had any such notion. [passage omitted]

Piskor: There is growing evidence that chemical agents are being used in the clashes in Bosnia-Herzegovina and that the Muslim forces are using it increasingly often against the Croats. What is your view?

Binenfeld: This whole business about the use of chemical agents in Bosnia-Herzegovina, and I consider the use of chlorine to be a chemical agent, started long ago with Silajdzic's statement that, if given no other choice, they would use chlorine as a weapon. He threatened to poison all Europe with chlorine and similar nonsense. Had he used the chlorine in Tuzla he would have killed his own people first, because a chemical agent kills unselectively, and especially pays no attention to ethnicity.

But they really do have 500 tonnes of chlorine in Tuzla and now comes the most dangerous bit about it. They have threatened to use chlorine against the Serbs and the Serbs have accused them of actually doing so. However, this is not certain because UN experts have found smoke boxes and not bombs filled with chlorine. However, they have used chlorine against the Croats several times.

When we started to receive the initial reports about the use of chlorine-filled bombs in Vitez and Busovaca, for a long time we would not allow this to be revealed to the public until we held what we considered evidence. Evidence means the name of a hospital, a date, the name and surname of the patient, date of birth, symptoms, a medical examination, therapy, and the seal and signature of the physician in charge. Unfortunately, there is plenty of such evidence published. We have not received a denial of a single one either from the Muslims, whom we were accusing, or from the UN Protection Force. [passage omitted]

Piskor: Grenades filled with chemical agents are being manufactured in Tuzla. However, is Tuzla dangerous just because of this?

Binenfeld: Precisely. The Sodaso factory in Tuzla is a real ecological bomb. I studied the Sodaso factory in autumn 1992. Bearing in mind that I obtained information about the exact quantities of chemicals that they possess from the factory itself, I informed all the important officials in the world about the danger. They have all acknowledged it but nobody has done a thing about it. I have informed the world that the approximately 60 tonnes of mercury in Tuzla presents a danger of contamination spreading via the Spreca River practically all the way to the Black Sea. The representative of Tuzla in Zagreb has openly threatened to do this. Bearing in mind that, apart from mercury, they have more than 150 tonnes of a chemical similar to the one in Bhopal, where a tenth of the quantity caused a huge ecological catastrophe and killed several thousands of people, it becomes clear why I have said that Sodaso is a real barrel of gunpowder. There is also a great quantity of hydrochloric acid and other acids. If an explosion occurred, lethal concentrations of

acids would emerge. It is actually difficult to anticipate what would happen, how many people would perish, how many would be injured, and what the environment would be like afterward. It would be a catastrophe. I have proposed that these chemicals be transported somewhere safe, but, naturally, again without any success. [passage omitted]

BULGARIA

Power Engineering Chief Views Nuclear Waste Storage Problem

AU2401125394 Sofia 24 CHASA in Bulgarian
20 Jan 94 p 18

[Text] The residual fuel from the Kozloduy Nuclear Power Plant can be processed in Russia if we form a joint enterprise, Power Engineering Committee chief Nikita Shervashidze announced.

"We will propose this to the Russians at the next talks," he explained. Bulgaria can carry out construction work in Russia, in return for which they could accept our waste nuclear fuel at a more acceptable price.

The Russians refused to accept radioactive waste in 1988, since when we have been stockpiling it in a temporary store. According to our contract with the former USSR, they should take back the fuel free of charge as long as we have nuclear plants. They have agreed to accept the fuel at a price of \$1,016 per kilogram, which will cost us \$22 million per year.

An alternative is to store the waste fuel in special containers near Kozloduy. These containers would cost us \$20 million until the year 2000.

So far, the most acceptable offer that we have received for storing the waste in Bulgaria is \$60 million, which was offered by the U.S.-French consortium Framatom-Nuclear Pacific.

ARGENTINA

World Conservation Summit Concludes

*PY3101173994 Madrid EFE in Spanish 2236 GMT
26 Jan 94*

[Text] Buenos Aires, 26 Jan (EFE)—Concern over conditions of human life and the consumption of earth resources were the main subject in the conclusions of the 19th General Assembly of the World Conservation Union [Union Internacional para la Conservacion de la Naturaleza—UICN], which closed after 10 days of debate in Buenos Aires.

There was more interest in the sustained development of the planet, that is for the conditions in which human life develops and for the rational consumption of the earth resources, than in the effort to preserve animal species and ecologic systems.

This attitude caused discomfort among some non-government organizations which fear that the UICN may become a bureaucratic entity similar to other international forums in its efforts to establish a dialogue with industry and commerce.

The UICN considers the growing membership of indigenous, agricultural, and cattle farmer groups favors strong action in favor of the preservation of traditional resources and development, which should be gauged according to the capability of each region.

Experts say the industrialization process of developed countries should not be repeated, given that they have devastated most of their territories. Experts instead favor a development method that will protect the resources of each area and take advantage of the traditional knowledge of local inhabitants.

Experts from the five continents nonetheless greeted the unity shown by some national delegations in face of their need to present their proposals before the UICN as well as the capacity to unite like some regional blocs have done to strengthen their position.

The resolutions were presented by government and non-government members of the UICN. Of the 159 proposals, about 50 were withdrawn or dismissed.

The Spanish delegation managed to get its proposal to establish the Mediterranean Regional Office headquarters in Spain accepted. The coordination of activities in the Mediterranean basin will thus be managed from the Iberian peninsula.

The UICN groups together 600 Non-Governmental Organizations (NGO), 100 governmental agencies, and 67 member states. For the voting power to be balanced, NGO's and states are granted one vote while agencies (on condition they do not represent a member state) are given two votes.

Experts were of one mind about the importance of UICN meetings in providing useful dialogue between governmental and nongovernmental groups, since every motion before the assembly must be passed by consensus following a debate.

The influence of the UICN over governments has enabled some NGO's to successfully request UICN help to urge their countries' authorities to abide by ecological regulations accepted by the international community.

The European group, however, was somewhat reluctant to discuss governmental issues that are deemed to fall under the jurisdiction of the European Union (UE), like questions pertaining to the GATT.

Biodiversity, the exportation of toxic waste, and environmental education were among the subjects mooted at the general assembly as well as internal issues, UICN actions before some governments, sustainable development, the conservation of different species, and the management of natural resources.

No agreement was reached on a resolution that sought to regulate UICN's action over the World Bank and other international financial organizations due to the amendments introduced by a group of NGO's.

Following a heated debate on the law on the hunt of large cetacea, two resolutions highlighting the ban on whaling were passed.

The minutes and resolutions of the 19th UICN General Assembly will soon be published and distributed among its members.

BOLIVIA

Armed Forces Begin Environmental Defense Activities

*94WN0126A La Paz PRESENCIA in Spanish
15 Dec 93 p 7*

[Article by Delfin Arias Vargas: "Environmental Battalion: First Step of 'New' Armed Forces"]

[Text] On 20 December, once the final administrative and technical details of its mission are cleared up, the Army Environmental Battalion will be moved into the Ulla Ulla region. The Armed Forces will thus have taken the first and most fundamental step toward fulfilling their role in the country's new social and political reality.

After several months of study and evaluation of the functions to be performed by the Ulla Ulla headquarters, its installations will be inaugurated by the highest government and army officials. Other units similar to this battalion will subsequently be set up in other regions of the country, according to official Defense Ministry sources.

"We are hopeful and that the service facilities required by this Ulla Ulla unit will be completed by 20 December,

and are deeply gratified that this will enable the unit to begin its activities immediately," said Army commander in chief, General Reynaldo Caceres, in an upbeat tone, when asked about the matter.

The Ulla Ulla National Park Preserve contains within its territory, mainly, animals of endangered species, such as the vicuna, guanaco, and alpaca. These "auquenidos" [animals of genus *Auchenia* (synonym: *Lama*)] are hunted by poachers because of the high quality and commercial value of their wool.

This concern, and the need to make advantageous use of the military infrastructure and training, make the Armed Forces the appropriate institution to undertake the support of the country's integral development, as well as its defenses, and thus accomplish fully the Armed Forces' constitutional mission of safeguarding the nation's sovereignty and its natural resources, in accordance with guidelines laid down by the defense minister, Antonio Cespedes.

General Moises Shriqui, chief of staff of the Armed Forces, indicated recently that the funds the state earmarks for the Armed Forces will have to be reallocated to meet their highest priority needs, so that "the institution does not neglect its constitutional mission of preserving the country's sovereignty and fulfills its responsibilities in support of the country's development."

Future Projects

According to Defense Ministry sources, four social welfare projects similar to the Ulla Ulla project, to aid the inhabitants of the country's rural regions, and to be carried out by the Army, will be submitted to the Armed Forces high command for consideration in the coming weeks.

The announcement has the backing of the Army's commanding general, who stated that "under our current plans, the environmental defense units are to be implemented gradually during the coming fiscal year, in accordance with the requirements and the missions the government may be assigning to us."

In keeping with this position, the Ulla Ulla headquarters is being established as the first military unit to assume responsibility for the defense of the environment, particularly in border regions, where, in the absence of control by the state, natural resources are being irrationally exploited by citizens of foreign countries and by Bolivians.

Plan for Camelidos

In keeping with the military's new role as announced by the defense minister, a plan covering the breeding of "camelidos" [animals of the family *Camelidae*, which includes those of aforementioned genus *Auchenia*], and their commercial exploitation, was submitted, toward the end of last week, to officials of COFADENA [Armed

Forces National Development Corporation]. This plan guarantees a rise in the altiplano farmers' incomes.

This project, like the others, will be supported by the participation of Army officers in a training capacity, and of Army draftees doing their military service.

Not Only Plan for Camelidos

Sources consulted indicated that the military's new role will open the way in the valley regions for a project aimed at making use of hillsides to plant forage trees, which besides reforesting the area will supply firewood for the neighboring communities.

In the Chaco area, implementation of a plan is being advanced, again with military participation, calling for ecological management of the region, and the exploitation of its natural conditions of high temperature and dry climate during most of the year.

As explained by the experts whose opinion was sought and who work for the Defense Ministry, the planting of "leuquena" [lead tree, *Leucaena glauca*], a forage tree par excellence, which was also planted on the Abapo Izozog plains, although that agricultural development project was not completed, virtually guarantees positive results in the raising of goats and the production of milk.

Another project that will be considered by the Armed Forces concerns the preservation of the Moxos cattle country, in the Beni district, where more than 5 million hectares of cattle grazing land would benefit. It would include the application of techniques for sheltering cattle during periods of rain and the ensuing flooding.

Officials point out that, beginning in 1994, the above-mentioned assignments will impart to the Armed Forces the leading role in the nation's development.

Effect of Coca Cultivation in the Chapare Deplored

94WN0126B Santa Cruz EL MUNDO in Spanish
11 Dec 93 p 15

[Unattributed article: "Coca Plantations and Environmental Degradation"]

[Text] Between 1987 and 1991 more than 17,000 hectares of coca plantations were declared to have been eradicated in the Chapare under the Alternative Crop Planting Programs, and, until the end of the previous administration, it was maintained that the eradication program and the DESAL's [Center for Latin American Socioeconomic Development] operations had been a success.

Now, it is reported that satellite photographs show 47,000 hectares under coca cultivation, hence an actual increase. The United States Embassy has set a 1994 deadline for completion of the eradication, since it has

been found that only 10 percent of the production has a legitimate use, and that the rest is used for the manufacture of cocaine base.

The foregoing indicates the scantiness of the information filtering down to the public on the subject of coca cultivation. Since the topic is intertwined with police and diplomatic issues, the information being released is incomplete; and it still cannot be said that there is a strong current of public opinion in favor of replacing the coca economy.

The fact that has been given the least importance is that the Chapare is an ecosystem of approximately 2.5 million hectares that is in the process of being destroyed by coca cultivation and the use of chemical precursors.

Coca is necessary for soil preservation in the Yungas of La Paz, according to reports by LIDEMA [League for the Protection of the Environment]. But in the Chapare, farming techniques, lack of crop rotation, and weeding with the grubbing hoe, have all accelerated erosion and done away with the thin layer of topsoil.

In 1991, the degradation of the soil that was found to have occurred in the eradicated areas of the Chapare was such as to require a waiting period estimated at 10 to 15 years for its recovery.

But the problem is not only coca itself. According to data released to the press in 1991, the drug producers have, each year, been spraying between 121,000 and 127,000 tons of leaves with 278 tons of sulfuric acid and approximately 12 million liters of gasoline, kerosene, and jet fuel. Since coca cultivation has now expanded, it must be assumed that these figures have also grown. Even though not the entire measure of contaminants reaches the Chapare's soil or its rivers, it is known that lime and sulfuric acid drastically modify the pH of soils and waters. And the kerosene, spreading out into rivers, seriously contaminates the waters. Antidrug police forces have destroyed tens of thousands of vats and laboratories in the area.

The coca plant is not the only link in the chain, and, within the ambit of shared international responsibility for curtailing the drug traffic, the positions being taken against its cultivation are increasingly aggressive. This is not the case, however, with respect to the traffic of the chemical contaminants. Without coca there is no drug, but neither is there drug without precursors. In Bolivia alone there are four legally established enterprises for the manufacture of sulfuric acid, hydrochloric acid, and ammonia, although the industrial demand for these products is insignificant.

It seems that nations that manufacture chemicals have not shouldered the responsibility devolving upon them to control the trafficking in these products. Records

show that precursors are arriving from Germany, Argentina, Brazil, Chile, United States, Holland, Peru, Switzerland, Italy, England, France, and others. Legally or illegally imported, they are entering through Chilean ports.

Furthermore, all production increases when demand requires it. And while the Alternative Crop Planting Program has been a failure, the campaigns to curb the dealing and use of drugs in consumer countries have also been a failure.

Study Reveals Need for River Basin Policy

94WN0126C Santa Cruz EL MUNDO in Spanish
11 Dec 93 p 14

[Unattributed article: "Studies Confirm River Basin Problems"]

[Text] For those who do not understand or do not want to understand the need to develop a policy of river basin management, there are recent studies, carried out by CIMAR (Center for Research and Management of Renewable Natural Resources; UAGRM [expansion not given]), that provide eloquent data on the rivers of the Sara e Ichilo province.

The Pirai problem area concerns national property. Reference must therefore be made to other basins that are also in a threatening situation that is the result of meddling by the hand of man.

Rio Yapacani Basin

Originating at the Cienaga River, the Yapacani River basin has a steep downgrade, from 2,400 meters above sea level to 1,500 meters above sea level, within the first 56 kilometers of its descent. This contributes to the natural excavation of the riverbed and the carrying down of sediments by the river, as well as the erosion of the surrounding hillsides by farming and overgrazing. At the tableland there is good undergrowth, which leads to the assumption that the input of sediment to that point is low.

This confirms that the enormous volumes of sediment arriving at the lowland, silting up the riverbed, and forcing its permanent divergence have their origin in the mesothermal valleys.

The consequences are serious problems to roads, bridges, and other infrastructure in the lowland.

Rio Surutu Subbasin

The studies made under the SENMA-BID [expansion not given] project, bear out the conclusion that due to the steep downgrade of its subbasin and main riverbed, the Surutu River presents torrential characteristics and flash currents that create a high risk of flashfloods, and has a substantial capacity for natural excavation of the riverbed, and for carrying down sediments (gravel and sand) that are deposited beginning at the Huaytu area where its

banks lack vegetal cover. This renders the basin "very frail," with results that are being seen around the mouth of the Yapacani River—where some years ago the main channel was two kilometers away from the bridge and where it is now threatening to break up the access road to the bridge—and at Huaytu where the ongoing natural excavation is threatening the rural farmlands.

Rio Palometilla Subbasin

The main problem presented by this river is the high volume of sediments (soil and embankment) it carries down from its headwaters and the hillsides, owing to the farmers' clearing of trees and shrubs from the terrain. The original level of the riverbed has been raised, causing damming and flooding of considerable magnitude in the "El Torrente" sector, with destruction of the Montero-Yapacani road creating traffic problems, and the inundating of certain farming and cattle-raising sectors downstream in quasi-permanent form, with consequent losses.

Rio Ichilo Basin

According to SENMA-BID researchers, this river and its tributaries carry sediments in suspension in considerable quantities, resulting from farming at the foot of the mountain and in the lower sector of the basin.

Rio Palacio Subbasin

The damming and flooding of the Antofagasta area is attributable to the following causes:

- 1) Farming activities (clearing of land and trails) have blocked natural drainage;
- 2) When the YPFB [Bolivian Government Oil Deposits] built its seismological stations, it left embankments that actually are submerged dams; when the ENFE [National Railway Enterprise] built the railway, in 1970, crossing the area's natural drainage lines it caused the obstruction of the riverbed by aquatic and shrub-like vegetation.

This is a simplified summary of a wide-ranging study that has been made on the problems in the river basins, that are adversely affecting the farming and livestock industry, the transportation industry, and road infrastructure, in addition to damaging the environment.

It is recognized that substantial programs to remedy this situation have not been developed, but targeted efforts have been deployed, such as the drainage system project in San Juan de Yapacani (JICA [Japanese International Cooperation Agency]); the study and design of the drainage system in the colonia Antofagasta (FAO/CORDE-CRUZ [Food and Agriculture Organization/Santa Cruz Development Corporation]), which is to be financed by PRODEPA [expansion not given]; and the SEARPI [expansion not given] and Regional Drainage Study pilot projects by the CIAT [International Center for Tropical Agriculture].

BRAZIL

Government Preparing To 'Confront' Environmental Concerns

PY2801221494 Sao Paulo GAZETA MERCANTIL in Portuguese 27 Jan 94 p 12

[By Maria Helena Tachinardi]

[Text] Brasilia—The relationship between commerce and the environment, a matter about which international organizations, exporters, and the Brazilian Government have all been concerned, will be high on the agenda of a meeting sponsored by the United Nations Environment Program (PNUMA) and by the United Nations Commission for Trade and Development (UNCTAD), for 17 February in Geneva.

Environment and Legal Amazon Region Minister Rubens Ricupero was yesterday officially invited by Elizabeth Dedswell, PNUMA director, to preside over the Geneva meeting. The minister said it will be an opportunity to make an evaluation of the talks on the problem and on the progress made during the Uruguay Round of the General Agreement on Trade and Tariffs (GATT) talks, which were concluded on 15 December 1993.

In the opinion of Ricupero, the link between trade and environment and the so-called competition rules will be the two main topics of international economic discussions in the next few years. The Brazilian Government is getting ready to confront the various initiatives that are beginning to proliferate, like green stamps, special packaging standards, and European and U.S. laws aimed at preserving the environment and which affect Brazilian exports.

Interministerial Meeting

An interministerial group headed by Winston Fritsch, the Finance Ministry secretary of economic policy, met at the ministry last week to discuss the problem of industrial policy from the viewpoint of Brazil's environmental commitments. Says Ricupero: "We studied how the new industrial policy will have to adjust itself to rules such as the ISO 9000 standards, trying to prevent our competitiveness from being affected."

Ricupero will prepare a document outlining the Brazilian position. "The Brazilian sectors with the heaviest weight among exports, like paper and cellulose, and iron and steel, are sensitive to the new requirements tied to environmental preservation," the minister said. "We must give those sectors environmental standards in order to prevent them from becoming the victims of protectionist offensives," he said.

Coal

The minister will go to Santa Catarina over the weekend to discuss the environmental impact of the coal industry.

According to Ricupero, in his ministry there exists the Pro-Vida program to help the industries of the sector recuperate deteriorated areas.

Within GATT there is a work group studying trade and its relationship with the environment. The group was created in 1971.

The group met again only in 1991, and so far has held four or five meetings to address matters like the European Union's green stamp and labelling and packaging standards. "This group will receive additional impulse" in the next few years, Ricupero said, because of the importance of the subject.

COLOMBIA

Government Initiates Environment Ministry

PA3001133094 Hamburg DPA in Spanish 1416 GMT
29 Jan 94

[Text] Santa Fe de Bogota, 29 January (DPA)—Presidential Narino Palace sources reported today the Colombian Government had initiated the new Environment Ministry, which will watch over and protect the country's natural resources from now on.

President Cesar Gaviria has appointed Manuel Rodriguez as this agency's first minister. Rodriguez was director of the government's Institute for the Development of Renewable Natural Resources (Inderena), an organization that will be liquidated shortly.

The Congress of the Republic approved the creation of the Environment Ministry last year. The guidelines, planning, and implementation of this ministry will be financed by a special transfer of resources, Rodriguez stated when he accepted the position.

Colombia is a country rich in natural resources, but those resources have suffered a serious erosion during the past years due to the high levels of contamination and deforestation to allow for the emergence of "concrete jungles."

The government has announced, however, that it will launch a strong environmental protection policy, which the new agency will coordinate.

ECUADOR

Mangrove Reserves Endangered by Shrimp Industry

94WN0122A Guayaquil EL UNIVERSO "SUNDAY"
SECTION in Spanish 5 Dec 93 p 12

[Article by Silvia Coello Q.: "Mangrove Swamps Disappearing"]

[Text] Since 1987, at the start of the shrimp boom in Esmeraldas Province, the mangrove swamps have begun

disappearing, to be replaced by shrimp-breeding pools. One of the areas hardest hit has been Muisne which, after having had 3,500 hectares of mangrove swamps, is left with only 20 percent of that total. People from the island have made serious charges of illegal tree felling and fraudulent concessions to shrimp-breeding establishments. The mangrove swamp is disappearing, and nearly 2,000 users, such as scallop and crab fishermen and charcoal makers, are being hurt directly.

During the canoe trip that we took last week through the Muisne area, Nisbaldo Ortiz never stopped raising his hand to point to the sites where shrimp pools have supplanted what had previously been a mangrove swamp. We were accompanied by members of ecological groups, some settlers, and authorities from the Ecuadorian Natural Areas and Wildlife Forest Institute (INEFAN).

Nisbaldo is a young native of Muisne who has become the leader of the community's own mangrove swamp defense movement. Tired of complaining and appealing to the authorities to stop the illegal felling of mangrove trees, the community residents decided to create the Ecological Defense Foundation. It has its own surveillance committee to make constant checks of the area, so as to catch those felling the trees and attempt to stop them.

Despite the surveillance goals and action, what the community has been able to accomplish is very little or nothing. This is readily discernible, because shrimp-breeding establishments show up everywhere in this area. Some appear camouflaged. Anyone travelling along the Muisne River and viewing its shores, apparently filled with mangrove trees, would have every reason to think that the mangrove swamps are intact. However, one need only enter them a short distance to find the large shrimp-breeding pools.

The Muisne residents estimate that there must be about 250 shrimp-breeding establishments in the area, some small and others covering many hectares. Added to this are the large expanses of now infertile mangrove land, which was once used for shrimp breeding and never reforested.

The original size of the local mangrove swamp on Muisne Island was 3,500 hectares, and now the largest remaining areas, between the localities of Bunche and Mompiche, measure 716 hectares. In other words, approximately 80 percent of the mangrove swamps have been destroyed.

The tree felling boom began in 1987, upon completion of the paved road leading to Nuevo Muisne, situated opposite the island. With the start of the indiscriminate tree cutting, the shrimp boom also began in the area. Besides the threat to nature entailed by the disappearance of the mangrove swamp, large groups of humans, such as scallop, crab, and other fishermen, larvae collectors, and charcoal makers, are being hurt by the shortage of products and the deterioration in their way of life. Seven

communities and six districts, located between Bunche and San Gregorio, in Muisne Canton, with approximately 1,680 inhabitants, have been forced to seek their catch far from the area, or to change their mode of living.

Simon Vega, aged 30, claims to have been catching scallops and crab in the mangrove swamp all his life.

Now, he also has a tricycle of the type used on the island to carry tourists to the beach, "because if I did not have another job I could not support my family. In the past, I used to catch from 300 to 400 scallops in two or three hours. Now, working almost all day, I can barely collect 40 or 50, and I earn only 4,000 sucres from that."

However, the problem is not merely a financial one. Simon adds that anyone entering the mangrove swamp does so risking his life. "They do not even let us approach the shrimp breeders' shores. If you go in too far, they shoot you. One day they shot and wounded my mother, who is 60 years old and also fishes for scallops."

Lourdes Proano, secretary of the canton's Civic Board, who is also fighting to defend the mangrove swamp, claims that the situation has worsened, particularly for poor families and women, most of whom are engaged in scallop fishing. "While they are destroying the livelihood of the people here, the shrimp breeders have not generated sources of employment for the residents, because most of the people they hire are from other places."

Charges

The Muisne mangrove swamps were one of the best reserves in the country. The largest one now is the reserve located in the northern part of Esmeraldas, between Limones and San Lorenzo, with approximately 40,000 hectares. However, 15 percent has been devastated by the shrimp breeders' intervention. In 1986, the mangrove swamps were declared protective woods by law; hence, felling them is illegal. So, what is the explanation for the shrimp-breeding establishments' presence in the mangrove swamps?

The members of Muisne's Ecological Defense Foundation show us a considerable number of charges that they have brought to the local and national authorities, who have not adopted any measures to deal with them. The Muisne residents admit that they are not optimistic about the type of action taken by the authorities. They inspect at a given time, halting the work that is being done on the shrimp pools. "On those occasions, they stop everything, but the work is continued afterward, because the financial pressures are much stronger," remarks Lourdes Proano.

Nisbaldo Ortiz adds: "On the other hand, a genuine black market for the sale of mangrove woods has become legitimized. Through it, the businessmen learn that they must first cut or destroy the mangrove swamps, and then request the concession. The local authorities' action has been very slight, and they act only when pressured."

Since 1989, the foundation has reported 37 cases of mangrove felling, only four of which have been handled properly. A report from that institution states: "Nearly all the violators were reported on time, when they had just begun cutting or sawing mangrove thickets. Yet the vast majority managed to complete their shrimp pools, because the competent authorities failed to do their duty by stopping them permanently, confiscating tools, punishing the guilty ones, and forcing them to repair the damage they had caused. On the contrary, the collusion of bureaucrats on all levels in failing to take action is obvious."

The charges in each case are detailed. They note, chronologically, how the cutting occurred; and, insofar as land ownership certificates are concerned, they indicate that the majority of shrimp-breeding establishments have fraudulent ministerial decrees.

They also charge that, in both the Muisne area and northern Esmeraldas, the IERAC [Ecuadoran Institute of Agrarian Reform and Settlement], in a clear violation of the Forest and Wildlife Law, is granting permits and concessions to private individuals in extensive mangrove swamp areas.

Lack of Institutional Coordination

Institutions such as the Merchant Marine, the Undersecretariat of Fisheries, the Coastal Resources Management Program, and the INEFAN are supposed to oversee the proper operation of shrimp-breeding establishments. Luis Valverde, national forest director, declares: "There is, however, no order; rather, they just come and cut trees. The Merchant Marine is the one responsible for beaches and bays; it should come and put them in jail. But, in fact, this does not occur. Almost none of the certificates issued for forming shrimp-breeding establishments have been authorized by the Ministry of Agriculture through the INEFAN, at least so long as I have held this position."

So, what is the explanation for the shrimp breeding establishments' unauthorized presence? "Because there is big capital here; this is achieved with banknotes here."

"Furthermore, the INEFAN is responsible only for the trees. So, when they are already cut, we have to apply the law stating that the fine is from one to 10 minimum living wages. The forest law does not call for criminal type action. So, I think that the only way to stop the felling is to heighten the awareness of the citizens. Shrimp exports are the third-ranking item in the nation's economy; and so, these are very powerful people. It is not that we oppose the shrimp breeders' establishments or the nation's progress. They could be started, but in the upper part of the mangrove swamp, not in the swamp itself." This is Valverde's response.

By law, it is determined that the Merchant Marine has control over the beach and bay areas, and that the INEFAN can take action only in areas declared protective woods. Thus, in one way or another, the control of

the mangrove swamps depends on these two institutions. Moreover, the Constitution of the Republic specifies that no institution may become involved in another's activities. With this situation, Jorge Barba, director of the INEFAN, claims that the advantage of the institute headed by him is that the INEFAN law stipulates that it must concern itself with all the marginal land not being used for agriculture or livestock raising, such as the mangrove swamps. "This has enabled us to accomplish some work; and, for cases such as these, the Commission for Environmental Affairs has been created."

Barba adds that, since the INEFAN has just been created, plans and maps are yet to be made for this area, so as to study the problems in detail. "We are just now meeting with representatives of the World Bank, and we shall request \$60 million for the renewable resources sector. We also intend to meet with the owners of the shrimp breeding establishments, so that, instead of being enemies, we can work together."

The National Campaign for Defense of the Mangrove Swamps and the South American Mangrove System charged that the national forest director, through an official memorandum dated 31 August of this year, set a price per pilot and per hectare of mangrove trees, thereby legitimizing their destruction.

When Barba was asked about this, he commented: "We must give the mangrove tree a value, in any case, whether it is cut with or without a permit: we have to collect. It is not a sin to cut a mangrove tree; the sin lies in its being cut without many more being planted. So, the problem is not in setting a value for it, but rather in undervaluing it."

Use Without Destruction

Good management of resources seeks a break-even point that will enable people today to meet their needs without denying opportunity to future generations. The mangrove swamp has done the country much good; but it cannot stand there untouched, either. It must be used, but without being destroyed. This statement was made by Washington Macias, director of the Pedro Vicente Maldonado Foundation which, together with the Coastal Resources Management Program (PMRC), has a management plan for the Muisne area, among others in the country. Macias adds that the break-even point in a mangrove swamp is reached when more than 75 percent of its trees are felled.

The Pedro Vicente Maldonado Foundation, jointly with the PMRC, is working on the process of mangrove tree regeneration. As Macias indicates, this means that some mangrove tree users could make use of part of their hectares alternately. For example, if they use 20 for making charcoal, immediately harvesting it, and do the same thing, consecutively, with the other hectares, when they reach 200 hectares the first 320 would already have been regenerated. He remarks: "We must see to it that the communities have direct access to the mangrove

swamp for activities that are not devastating, but, rather, productive, such as tourism."

"In Venezuela, for example, in all their soap operas they show the Margarita mangrove swamps: which are rather insignificant from a scenic standpoint when compared with the mangrove swamps extending from Puerto Bolivar to Jambeli." This claim is made by Macias, who adds that, "if concessions have been made to shrimp breeding establishments in mangrove areas, it is because the law itself is inadequate. Hence, there must be a heightened awareness among the shrimp breeders."

For the present, the Muisne residents have begun establishing a new strategy for themselves: speaking directly to the shrimp breeders. "We think that they sometimes cut down mangrove trees without realizing what they could be causing. We want to enter into a joint system with them to save our mangrove swamps."

Nevertheless, they will demand, officially, that the State Comptroller General's Office form a committee to audit the management of the public institutions that have granted concessions to shrimp breeders since the date when the country's mangrove swamps were declared protective woods.

[Box, p 12]

Particular Features of the Ecosystem

The mangrove swamp is the perfect habitat for scallops, crabs, and crayfish, because it produces the detritus that is the food for these species. It is produced when the mangrove tree dumps tons of dead foliage into the water. The mangrove swamp is a natural element to protect against downpours and to prevent flooding in nearby towns and land. It prevents the winds blowing from the sea inland from salinizing agricultural land.

Generally, since mangrove trees do not have one large root, but rather are entangled with one another, when they are cut, even though it be only one tree, there is a danger that the others will fall.

The tree produces pilots, and the bark on the branches is useful for making a tanning substance. Other major users of the mangrove swamp are the charcoal makers.

Indigenous People Seize Energy Ministry, Threaten Oil Wells

PA2401231794 Madrid EFE in Spanish 1935 GMT
24 Jan 94

[Text] Quito, 24 Jan (EFE)—Representatives of Ecuador's indigenous people today threatened to seize oil wells in the nation's Amazon region if the government proceeds with the seventh round of bids—a bidding process for which the indigenous people have requested a 15-year moratorium.

Luis Macas, president of the Confederation of Indigenous Nationalities of Ecuador (Conaie), said the indigenous people are willing to take up the last resort, adding that the indigenous people and others residing in the Amazon region could even seize the wells "to prevent additional ecological disaster."

The Ecuadoran Government today opened the seventh round of petroleum bids for the exploration and exploitation of 3.2 million hectares in the Ecuadoran Amazon region and offshore areas. The indigenous people's representative said the petroleum companies have caused irreparable damage to the environment and to the life of the inhabitants of the Ecuadoran Amazon region.

Macas said, "The Ecuadoran Government is putting the only green area left in the Amazon region up for bid, and

this is the reason why we have requested a 15-year moratorium on the bidding."

The indigenous leader added that the exploitation of petroleum has been carried out in an irrational manner and without consulting the people who are most affected—namely, the indigenous people and residents of the Ecuadoran Amazon region. The Conaie president noted that the indigenous people have filed a suit with the Human Rights Commission of the OAS, and he added that the international organization is waiting for the government to send the commission an invitation to inspect the oil drilling areas.

Ecuador's environmental and indigenous people's organizations this morning took over the Energy and Mines Ministry to pressure the government not to carry out the bidding. They also requested a meeting with President Sixto Duran-Ballen.

BANGLADESH

Foreign Minister Briefs Envoys on Environmental Problems

BK1301144694 Dhaka Radio Bangladesh Network in English 0130 GMT 12 Jan 94

[Text] Foreign Minister Mustafizur Rahman has said Bangladesh is facing serious environmental problems caused by external harnessing of shared international water resources. Briefing the heads of foreign missions in Dhaka yesterday, he said the serious environmental problems being faced by Bangladesh call for urgent international attention. Some of these problems are within the capacity of Bangladesh to solve, but much of them are caused by external harnessing of shared international water resources. He suggested that by visiting the areas in April and May, the envoys could themselves see the impact on the environment of Bangladesh by these external harnessing of waters.

INDIA

U.S. Antipollution Law on Ships Decried

94WN01124 Bombay THE TIMES OF INDIA in English 27 Nov 93 p 10

[Text] Bombay, 26 Nov—The draconian anti-pollution law recently imposed by the U.S. on ships trading with that country is not fully justified as ship-source pollution only amounts to 10 percent of the total marine pollution, Mr. P.K. Srivastava, director (bulk carriers and tankers), Shipping Corporation of India, told a seminar here on Wednesday.

It was revealed at the seminar, organised by Steamship Mutual Underwriting Association (Bermuda), a leading P&I (protection and indemnity) Club, and Crowe Boda and Co, its Indian correspondents, that the U.S. has rejected the international conventions and their protocols and had its own pollution legislation—the Oil Pollution Act.

Referring to the U.S. legislation, Mr. Srivastava said such laws, if they are not reality-based, would act as disincentive. As the issue had become highly emotive, all protests about the perceived imbalance between the degree of the ship-generated pollution and the draconian nature of the law were proving to be a cry in the wilderness.

There has also been concern that the ready availability of ever-increasing compensation funds for marine pollution tends to instil a sense of complacency within the operational sector of the shipping industry, according to him.

The P&I Clubs had a role in mitigating the problem as pollution related claims, not only accounted for a sizeable part of the total P&I claims but also because the

wide publicity that is being given to the incidents of pollution affected the professional image of the shipping industry, he said.

The clubs cover claims against their members for loss damage and expense arising from pollution caused by an escape or discharge of oil from their vessels including fines, up to a limit, at present, of \$500 million per accident or occurrence.

Dr. I.C. White, managing director of the International Tanker Owners' Pollution Federation, the UK, gave details about the federation's computerised oil spill response database and said it also provided practical information on oil spill response techniques.

He said the incidence of oil spills greater than 5,000 barrels (about 700 tonnes) from vessels had come down from an average a year in the 1970's to nine in 1980's, spills of the size resulting from recent accidents involving the Nagasaki Spirit, Aegean Sea, Braer and Maersk Navigator being exceptional.

The "entry into force" provisions of the conventions and their protocols have, therefore, been amended so that they will take effect without the U.S. support. One of them is the International Convention on Civil Liability for Oil Pollution Damage 1969 (CLC) and the other International Convention on the establishment of an International Fund for Compensation for Oil Pollution Damage 1971 (the Fund Convention), established to provide additional compensation in cases where the damage claims exceeded the shipowners' liability under the CLC or where the case fell within one of the exceptions of defences under the CLC.

CLC is funded by the tanker owners through their insurers, where the Fund Convention is funded by contributions levied on crude and fuel oil cargo receivers who get more than 15,000 million tonnes of oil by sea in any one year.

The main amendments to them adopted by the protocols have increased the limits of liability under CLC and Fund Convention, taken into account not only actual pollution but also pure threat situations, extended the geographical scope of the conventions and amended the definition of pollution.

The CLC is now applied in 79 countries, excluding the U.S., and 56 of them have adopted the Fund convention. The protocols have yet to come into force.

Anticipating delays in the ratification of international conventions, the tanker and oil industries established voluntary agreements such as Tanker Owners' Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP), supported by P&I Clubs, who are insurers of the tanker industry, and Contract Regarding a Supplement to Tanker Liability for Oil Pollution (CRISTAL), an agreement between oil companies anticipating the coming into force of the Fund Convention.

Limits of liability which apply under CLC and the Fund are exceeded by the limits under the voluntary schemes as the voluntary schemes have moved ahead of the international conventions.

IRAN

Marine Life Studies in Caspian Sea Planned With Russia

LD2001094294 Tehran IRNA in English 0644 GMT
20 Jan 94

[Text] Bandar Anzali, Gilan Prov., Jan 20, IRNA—The Fisheries Organization of Iran signed protocols with Russian experts here Wednesday for cooperation in marine life studies in Iran's coastal waters of the Caspian Sea.

The protocols were inked at the end of a five-day session of fishery experts of Iran and Russia at Mirza Kuchak-Khan Institute of Rasht, near here.

Director of the Research Center of Iranian Fisheries in Gilan Province Sha'ban-'Ali Nezami told IRNA here that three agreements had been entered into with the Russian officials which aimed to determine hydrological and hydro-biological resources of the southern waters of the Caspian off the Iranian coast.

He said a number of Russian experts would also offer their expertise to their Iranian counterparts in the area of research on sturgeon fish. In addition, he said, it was agreed that a group of Iranian fisheries experts would visit Russia next year for studies in this field.

The fisheries officials of the two countries have also agreed on exchange of students.

JORDAN

Official Denies Agreement With Israel on Pollution Control

JN2001212294 Amman Jordan Television Network
in English 2000 GMT 20 Jan 94

[From the "News at Ten" program]

[Text] Jordan denied that it had agreed with Israel on measures to control marine pollution in the Gulf of Aqaba. The head of Jordan's delegation to the environmental multilateral talks, Dr. Anis al-Mu'ashshir, said no such agreement was reached with Israel. He told "News at Ten" that there had been a decision by the environment multilateral meeting to establish three units in al-'Aqabah, Elat, and Nuwaybi'.

Dr. al-Mu'ashshir said the units will be established with the help of the European Union, and will combat oil spills and pollution as well as deal with emergency situations in the Gulf of Aqaba.

He said the Europeans will discuss the implementation of the decision with Jordan, Israel, and Egypt, but stressed that this was in no way an agreement with Israel.

SRI LANKA

Cabinet Ratifies Climate Change Convention

BK1401122094 Colombo Sri Lanka Broadcasting Corporation International Service in English 1045 GMT
14 Jan 94

[Text] Sri Lanka has ratified the Climate Change Convention. It was one of the first 50 countries to recognize it. This convention will come into effect from 25 March this year. On the recommendation of Dr. Wimal Wickramasinghe, minister of environment and parliamentary affairs, the cabinet decided to ratify the convention, and the instrument of ratification was transmitted to the depository of the UNA [United Nations Association].

The Climate Change Convention addresses one of the greatest challenges facing the global comity. The objective of the Convention is to control the emission of greenhouse gases within acceptable limits so as to ascertain [as heard] the adverse impacts on the earth's climate system. The first conference of the parties to the convention will be held in April 1995 in (?Berlin). As a party to the convention, Sri Lanka is involved in the intergovernmental negotiations and will attend the conference of parties with a view to protecting the national interests as well as advancing the common interests of all people.

'National Forest Conservation Plan' Implemented

BK1401120294 Colombo Sri Lanka Broadcasting Corporation International Service in English 1045 GMT
14 Jan 94

[Text] A national forest conservation plan is now being implemented. It provides for systematic forest management and reforestation. Strict penalties are to be imposed for the destruction of forest. In addition, the master plan for forestry is to be revived.

Sri Lanka has lost over 400,000 hectares of its forest cover during the last decade. The rapid deforestation has been blamed on the growing population and other issues. Only 20.3 percent of Sri Lanka's land area is under forest. The forest cover stood at 70 percent at the turn of this century. The declined forest cover has caused natural disasters such as floods, soil erosion, and landslide.

REGIONAL AFFAIRS

Russia, Central Asian States To Save Aral Sea

LD1101160794 Moscow ITAR-TASS in English
1405 GMT 11 Jan 94

[By ITAR-TASS correspondents Vladimir Akimov and Amangeldy Akhmetlimov]

[Text] Nukus Jan 11 TASS—Russia and five CIS Central Asian states agreed on Tuesday to set up a joint fund to save the inland Aral Sea which is drying out and can result in a major ecological catastrophe.

At a meeting in the Uzbek city of Nukus situated in the delta of Amu Darya River flowing into the Aral Sea leaders of Uzbekistan, Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan and a Russian deputy premier adopted a number of agreements which envisage the creation of the fund, a programme of improving the ecological situation in the Aral Sea zone, as well as provisions for an interstate council on the problems of the sea. The executive committee of the council was created.

Russia was represented by Deputy Prime Minister Yuriy Yarov. The meeting was also attended by UN envoy in Uzbekistan Hamid Malik.

International Support Pledged for Aral Sea Conference

PM1301112394 Moscow IZVESTIYA in Russian
13 Jan 94 First Edition p 2

[Report by Shakhabutdin Zaynutdinov: "Presidents Resolve Aral's Problems"]

[Text] Nukus—A representative conference devoted to comprehensive issues of the protection of the Aral Sea ended in Nukus with the signing of a statute on an interstate council on the problems of the Aral Sea basin and the approval of a long-term program for the region's socioeconomic development and the improvement of the ecological situation in the Aral region in the next few years.

Official delegations from the following took part in the work of the conference: Kazakhstan, headed by President Nursultan Nazarbayev; Kyrgyzstan, headed by President Askar Akayev; Tajikistan, headed by Emomali Rakhmonov, chairman of the Supreme Soviet; Turkmenistan, headed by President Saparmurad Niyazov; Uzbekistan, headed by President Islam Karimov; and the Russian Federation, headed by Vice Premier Yuriy Yarov. Representatives of international organizations also took part.

Opening the conference, the head of Uzbekistan noted that much has been done to supply the inhabitants of the Aral Sea region with drinking water and medical supplies. Fewer chemicals are now being used in agriculture. Thanks to the efforts of the leaders of the countries of the

region the decline in the water level in the sea has been halted but the tragedy of the Aral Sea is affecting the health of people far beyond the sea basin. All this is directly connected with the uneconomic use of water resources and the shortage of money. To rectify the situation joint efforts are needed by all Central Asian states with the assistance of the international community.

This idea was supported by Kazakhstan President N. Nazarbayev, chairman of the international fund to save the Aral Sea, who informed those present that messages of support had been received from the leaders of the United States, France, Britain, Spain, Belgium, and Turkey. Khalid Malik, Uzbekistan's permanent UN representative, gave an assurance that international organizations are prepared to render every support in this common cause.

Illegal Trade in Rare Animals, Plants on Rise in Russia, CIS

94WN0139A Moscow NEZAVISIMAYA GAZETA
in Russian 11 Jan 94 p 6

[Article by Andrey Bayduzhiy: "Live Merchandise Leaving Russia. If Barriers Are Not Placed on Its Path, the Red Book Could Turn Into Many Volumes"]

[Text]

Sore Spot

It seems that among the largest items of Russian exports—petroleum, gas, and metals—in the near future it will also be necessary to include trade in living merchandise. No, so far things have not reached the point where Russia, like Africa in the 18th century, has turned into a supplier of human beings for the slave market. It is much simpler: As in other states of the former USSR, illegal purchase and sale of rare kinds of flora and fauna has been developing more and more actively here.

According to information from international experts, during 1991 in Europe alone contraband trade turnover in unique species of animals and plants exceeded \$1 billion. Two-thirds of its volume was in former USSR republics. Things have certainly not improved on the territory of one-sixth of the earth's surface, but as the boundaries of the collapsing Union become increasingly penetrable, they leave no doubt that the scale of this trade has increased even more. For example, not so long ago a scandal broke out in the West over press reports to the effect that certain Russian firms had offered to let wealthy foreigners entertain themselves by hunting the Ussuriysk tiger, which is in the Red Book. A number of international organizations have officially expressed their concern about the increased scale of uncontrolled hunting in Russia.

It is not even that killing animals is a bad thing in general, and rare ones in particular. As early as 1973

Russia along with 120 other countries signed in Washington a Convention on International Trade in Species of Wild Fauna and Flora Threatened by Extinction. According to this document, international trade in all representatives of the animal and vegetable kingdoms included in the international Red Book shall be prohibited. Moreover, each country has a list of local species of flora and fauna whose sale abroad, although permitted, must be clearly restricted and controlled with the help of licenses. Among the domestic animals on this list, otters, wolves, lynx, and, of course, the symbol of Russia, the brown bear, are especially popular among foreigners. During 1993 the Main Administration of Biological Resources of the Ministry of Environmental Protection and Natural Resources issued 1,000 permits to various organizations for exporting, re-exporting, and importing 30,000 "objects of animal and vegetable origin." However, in the opinion of specialists, this is only the tip of the iceberg. In reality the scale of trade in living merchandise and its contraband turnover is at least 10 times greater.

Both individual unwitting citizens and completely respectable organizations engage in this business. Quite recently in Seattle (United States) they confiscated a batch of lynx hides shipped by the Irkutsk Fur-Hide Base without any license. Domestic and foreign environmental protection departments are becoming more and more concerned about cases of commercial hunting where animals that are not to be used for game shooting are being offered as future hunting trophies to people from distant foreign countries who wish them. It is extremely difficult to control this business: Workers in the majority of customs offices have no idea which species of animals are banned from shipment out of the country. But even if each crossover point were provided with a detailed list of them, this would not solve the problem. A customs official is not a biologist, and it is an impossible problem for him to distinguish the horn of a Siberian stag, the musk of a musk deer, or a bear's gall bladder from other parts and preparations whose shipment is no crime at all.

On the other hand, even if customs were to manage to prevent the shipment of one rare species or another out of the country, there arises the problem of what to do with them after that. There are no customs points with especially equipped points for keeping confiscated animals, and if they are confiscated they are very frequently doomed to death. The situation is complicated by the fact that after the elimination of the USSR the majority of its former republics simply have no time for controlling their fauna and flora. Under these conditions, Russia, as successor to the Union, with the agreement of other republics, was forced to take charge of issuing permits for shipping out representatives of disappearing species of the animal and vegetable kingdoms from Belarus, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, and Ukraine as well. But it will not be possible to arrange any kind of strict control of the situation in these countries in the near future.

The concern of the international community about the growing scale of illegal business in the former USSR developed into holding an international seminar on problems of illegal trade in representatives of wild flora and fauna at the end of last year in Moscow. Hot on its tracks, the Ministry of Environmental Protection and Natural Resources held a meeting of the collegium at which they prepared a draft governmental resolution calling for support for Russia's fulfillment of its international commitments. One of the main measures of the proposed government decree is to instruct the Customs Committee, the Ministry of Internal Affairs, the Russian Federation Procuracy, and other departments to take a number of effective measures to step up control over gathering rare plants and animals, trading in them, and allowing them to cross the border. But it is not likely that it will be possible to carry out what has been earmarked sooner than in a couple of years. For now it would be better for the disappearing animals in Russia to rely on their own legs and natural instincts in their fight with domestic businessmen and foreign poachers.

RUSSIA

Official Views Results of Caspian Bioresources Conference

94WN0127B Moscow ROSSIYSKIYE VESTI
in Russian 6 Jan 93 p 3

[Article by V. Zilanov, deputy chairman of the Russian Fisheries Committee: "Caspian Dialogue"]

[Text] Negotiations by representatives of the governments of all five Caspian states: Azerbaijan, Kazakhstan, Iran, Russia, and Turkmenistan about preparation of the draft of an agreement on conservation and utilization of bioresources of the Caspian Sea took place in Ashgabat, the capital of Turkmenistan. Vyacheslav Zilanov comments on results of the Ashgabat meeting.

With the disintegration of the Soviet Union and formation of new states with access to the Caspian Sea there was not only a shift in the geopolitical situation here but some radical changes in economic ties in every sphere as well, including utilization of bioresources and primarily the fishing resources of the Caspian Sea. They have always played a significant role in the feeding of the population of the Caspian states, while the sturgeon resources also constituted a legacy of the entire world community. The Caspian Sea basin is a world larder of five main species of the sturgeon family: beluga, starred sturgeon, Russian sturgeon, sturgeon Acipenser, and sterlet, which account for up to 90 percent of the world catch. Thanks to the efforts of domestic scientists and practical workers a scientifically substantiated system was worked out for reproduction, conservation, and rational fishing of the sturgeon family under conditions of regulated rivers and a deterioration in the ecological condition of the water systems. It is based on prohibition of sea fishing, restriction of river fishing, controls over fishing and a complex of reproductive measures.

Unfortunately this system which was operating successfully for more than 30 years, started disintegrating. There is a tumultuous increase in sea poaching since funds for protection services are lacking in the new states, and even Russia eased control over its own fishing operations because of financial difficulties, inadequacies of the legislative basis, creation of numerous owners, and for other reasons. In addition to that Azerbaijan, Kazakhstan, and Turkmenistan want to fish independently in their fishery zones, as formerly done by Iran, at the same time cooperating with Russia in the conservation, reproduction, and rational utilization of sturgeon reserves.

Thus, in the past cooperation was organized between two states—USSR and Iran, whereas at present there is the task of reaching agreement on equal and mutually advantageous cooperation in the conservation of Caspian Sea bioresources of five states. It was for that purpose that the third and final round of negotiations took place in Ashgabat (previous talks were held in Astrakhan and Enzeli (Iran)).

In the course of the Ashgabat talks (and they were difficult!), with the exception of two points, it was possible to reach agreement among all the Caspian delegations with regard to the text of the agreement on conservation and utilization of Caspian Sea bioresources. This agreement provides for the creation of a reliable legal basis for broad mutual cooperation among all Caspian Sea states in rational fishing on the Caspian Sea exclusively on the basis of scientific data and appropriate international control over fishing. It is planned to create an international organ—the committee for conservation and utilization of bioresources of the Caspian Sea, in which representatives of Caspian Sea states will be able to discuss and adopt decisions on issues of interest to them dealing with conservation of reserves and fishing. An international inspection service is also being created.

With respect to the sturgeon family all delegations agreed in principle to the prohibition of fishing at sea with the exception of special cases under the control of an international organ and the inspection service. Fishing for sprat, however, will be continued in areas of the sea traditionally used for that, but significant legal changes may take place in this area as well. The matter is that the main assimilated sprat fishing grounds are located close to the coasts of the Azerbaijan Republic and Turkmenistan whose delegations during the negotiations declared their intention of establishing fishing grounds 40 miles wide. These proposals found the support of delegations from Iran and Kazakhstan, which proposed narrower grounds of 25 to 30 miles. It should be noted that at the start of negotiations Turkmenistan declared the establishment of 12-mile territorial waters which was not anticipated by our delegation. Russia, however, considers that under conditions for preserving the traditions of sprat production and creating equal fishing conditions for fishermen of all the Caspian Sea states it would be best to preserve the existing fishing ground with a width

of 10 to 12 miles and a maximum of 15 miles. A final decision was not made specifically because of differences with regard to that issue.

The second matter in dispute was the site of a future headquarters of the committee's international organ. Two states are currently seeking it: Russia (Astrakhan) and Iran (Enzeli). I believe that in this case a decision may be reached with consideration of the scientific base available to each side and the possibilities of ensuring appropriate work by the commission secretariat. Our delegation, which included Anatoliy Guzhvin, head of administration of Astrakhan Oblast, promoted the selection of Astrakhan. No final decision has yet been reached.

After three rounds of negotiations it became absolutely clear that with any expansion of the fishing grounds losses would be suffered primarily by Russian fishermen from Astrakhan, Dagestan, and Kalmykia. With the different variants of the grounds of from 20 to 40 miles, these losses of the Russians will amount to from 40 to 100 percent of the annual catch for sprat. In that connection achievement of an agreement regarding the width of the grounds, in my opinion, is up to the politicians. A delay, however, could lead to the uncontrolled development of extensive sea fishing which poses a great threat primarily for the sturgeon family. It would be highly desirable to sign the agreement in early 1994. We are hoping that this is understood by all Caspian Sea states. At Ashgabat the delegations agreed to thoroughly study the viewpoints of the sides, reporting them to their governments and coordinating a final decision on the width of the fishing grounds and the site of the committee's headquarters through diplomatic channels.

Unfortunately there are "underwater reefs" confronting the draft fishing agreement. I have in mind the hullabaloo around the prospecting and extraction of oil and gas on the Caspian Sea shelf. In that connection some of our partners wanted to create wide fishing grounds for the sake of "the black gold" and even divide all of the Caspian Sea into sectors. Biological resources, however are indivisible, they are interrelated, while fish, and especially sturgeon, do not recognize any borders. I am assuming that the "underwater oil and gas reefs" can halt the "fishing vessel" of five Caspian Sea states en route to a common agreement only temporarily, but it is impossible to ground it. The fishermen know only too well that biological resources can benefit mankind forever only with their wise utilization on the basis of equal and mutually advantageous collaboration.

Presidential Edict Delimits State Owned Natural Resources

94WN0127A Moscow ROSSIYSKAYA GAZETA
in Russian 29 Dec 93 p 8

[Edict of the President of the Russian Federation on State Owned Natural Resources]

[Text] For the purpose of fulfilling the federative agreement, as well as for the preservation and rational utilization of natural resources of national significance, ensurance of stable development of the Russian Federation under conditions of a market economy, and in accordance with points 2 and 3 of the edict of the president of the Russian Federation of 7 October 1993 No. 1508 on legal regulation during the period of stage-by-stage constitutional reform in the Russian Federation, I hereby decree as follows:

1. In accordance with existing legislation deem it as feasible to delineate state property among natural resources, determining federal natural resources in the land areas, waters, forests, mineral resources, and resources in the animal and vegetable world, proceeding from the principle of their national significance.

2. Establish that federal natural resources may include:

Land plots and other natural assets made available for the needs of national defense and security, protection of state borders, as well as for the performance of other functions relegated to federal organs of state power;

Land plots occupied by federal power engineering, transportation, and space systems, facilities for nuclear power engineering, communications, the meteorological service, landmarks of historical and cultural significance, as well as by other complexes constituting such federal property;

Land plots, water and other natural complexes of federal nature reserves, national parks, state suburban natural preserves, resort and treatment and health-improvement zones, as well as other specially protected natural preserves of federal significance;

Varieties of flora and fauna recorded in the Red Book of the Russian Federation;

Species of animals which are economically valuable and are classified as protected whose natural migration crosses the territory of two or more subjects of the Russian Federation, as well as animals belonging to species included in international treaties;

Deposits of valuable minerals of national significance;

Water complexes located on the territory of two or more subjects of the Russian Federation as well as those on borders and those straddling the borders;

Other natural resources on the basis of mutual agreement among federal organs of state power of the Russian Federation and organs of state power of republics belonging to the Russian Federation, krais, oblasts, autonomous oblasts, autonomous districts, and the cities of Moscow and St. Petersburg.

3. The Council of Ministers—the government of the Russian Federation to perform the following upon coordination with organs of state power of subjects of the Russian Federation:

In the first quarter of 1994 elaborate and submit to the Commission of Legislative Proposals of the President of the Russian Federation drafts of enforceable enactments pertaining to procedures for determination of federal natural resources, questions of their delineation and the order of managing state owned natural resources;

In the first six months of 1994 submit lists of specific complexes constituting federal natural resources for their adoption in accordance with the law.

This edict becomes effective at the time of signature.

[Signed] B. Yeltsin, President of the Russian Federation

Moscow, the Kremlin, 16 December 1993

No.2144

New Parliament Urged To Adopt Decree on Nuclear Wastes

*LD1101172794 Moscow INTERFAX in English
1513 GMT 11 Jan 94*

[Text] Nikolay Shapovalenko, chief of the section to supervise radioactive security of defense sites, declared to Interfax that Russia's Defense Ministry and Navy had occupied a non-constructive position with respect to control over the storage of liquid radioactive wastes at military facilities on the part of the State committee on atomic supervision.

In his words, the Defense Ministry refers to the fact that civil departments abroad have never supervised such kind of military activity. Shapovalenko pointed out that the Defense Minister should issue a decree to bring into force a provision on the State committee on atomic supervision in the ministry's structure because "it is difficult to establish a single state system of supervision over radioactive security on Russia's territory without this."

Shapovalenko declared that last December a working group of the Environment and Natural Resources Ministry prepared a report for the government to solve the problem with liquid radioactive wastes. In particular, it proposes to forward membrane devices to reprocess nuclear wastes, which have been designed by the association Radon, to the Pacific Fleet for test exploitation.

In addition, he said, "we have accepted Japan's proposal which will hand over a dual-bottom tanker to Russia to store 10,000 tons of liquid radioactive wastes. However, the government must consider the issue on the construction of facilities to reprocess liquid radioactive wastes on the Northern and Pacific Fleets and several regional burial places in order to entirely resolve this problem."

A feasibility study for a burial place on the territory of the former nuclear test range on Novaya Zemlya has been already prepared and subjected to state ecological expertise. "The same burial place should be created in

the Far East, but if we start construction this year it will be concluded not earlier than 1997," said Shapovalenko.

He reported that a facility capable of reprocessing 8,000 cubic meters of liquid radioactive wastes annually will be assembled on the Kola peninsula on the basis of the water purification station of the Murmansk sea steamship line. Shapovalenko said that the Murmansk steamship line is ready to accept wastes from military crafts assigned to the Northern Fleet on a commercial basis.

Joint-American Environment Conference Set for 1994

LD1101172694 Moscow ITAR-TASS in English
1634 GMT 10 Jan 94

[By ITAR-TASS correspondent Aleksandr Shuvalov]

[Text] Moscow, January 11 (TASS)—Russia and the United States of America are planning to hold a joint conference on environmental protection in 1994. An initiative belongs to the Russian Space agency and the CIA.

The Russian Ministry of Ecology also has shown interest in taking part in the conference. Its experts believe that the forum will draft joint scientific approaches towards ecological problems. The two countries should coordinate methods and instruments for estimating the state of the environment, norms of top permissible concentrations of pollution, levels of radiation, noise, vibrations, magnetic field and other hazardous factors.

One of the tasks of the forthcoming conference is supposed to be the development of joint decisions on environment monitoring from the space, especially of the areas of nuclear power plants and other dangerous objects.

Problems of CBW Destruction Pondered

PM1701125394 Moscow ROSSIYSKAYA GAZETA
in Russian 15 Jan 94 First Edition p 3

["Expert Analysis" article by Igor Vlasov, head of sector of the Russian Federation President's Committee on Problems of the Chemical and Biological Weapons Convention: "Chemical 'Thorns' in the Country's Side"]

[Text] The problem of the destruction of chemical weapons has alarmed the country's public. The sociopolitical situation has been sharply aggravated in the regions where it is planned to site installations for the destruction of the chemical weapons arsenal, and certain representatives of social movements are trying to exploit the currently fashionable topic of chemical disarmament in their own interests. Journalists are citing unverified facts, and people weighed down with science degrees are now trying to draw attention to themselves by making revelatory statements. The press increasingly often carries articles in which so-called chemical weapons experts who like to pose as major specialists try to intimidate the

public with reports on the alleged continuation of scientific research into chemical weapons, their unauthorized destruction, secret burials on land and in water, and so forth.

In our view, such activity by "experts" and "selfless campaigners" is pursuing an unseemly aim: Using unverified and sometimes knowingly false statistics, they juggle this information around and impose on the public a distorted and unobjective view of the problem of the destruction of chemical weapons.

That is why I consider it expedient to examine consistently the basic stages in the implementation of the 1993 Convention on the Banning of Chemical Weapons.

First of all, I would recall that the state, which signed the Convention, is beginning work on the destruction of chemical weapons within a maximum of two years and will complete it no more than 10 years after the convention's entry into force. In the first stage, that is no more than two years after the ratification of the Convention, tests of the first facility for the destruction of chemical weapons will be carried out and then, no more than three years later, at least 1 percent of the stocks of these weapons is to be destroyed. In Russia's case this will mean 400 tonnes of toxic agents. In the subsequent stages, which are to be carried out no later than five, seven, and 10 years after the convention's entry into force, at least 20-45 percent of the weapons are to be destroyed, as are eventually all the remaining stocks of chemical weapons. Each state will choose its own method of destruction independently. It should be noted that the destruction process is to correspond to the very latest scientific achievements and be carried out at specially equipped sites. Meanwhile the destruction of toxic agents by burial on land, underwater, or by incineration in the open air is not permitted.

According to specialists' estimates, as far as Russia is concerned the Convention on Banning Chemical Weapons could come into force in 1995 and the operation of the first facility for the destruction of toxic agents could begin in 1997. Russian President B. N. Yeltsin made a statement in spring last year in which he said among other things: "The world has changed, Russia's position in the world has changed, and we do not intend to attack anyone. The time has come to get rid of chemical weapons—they are the past which we have inherited." Let us note that the problem of the destruction of chemical weapons is of great sociopolitical and social significance for Russia, due first and foremost to the need to lower the level of ecological tension in regions where the arsenals of these weapons are based. The program for the destruction of chemical weapons that the state is elaborating gives priority to the unconditional guarantee of safeguarding the life and health of the population as well as measures to protect the environment.

Social protection is also envisaged for the population living in zones where enterprises for the destruction of chemical weapons are to be sited: The latest technologies

will be used and the volumes of toxic substances to be shipped across Russia's territory will be kept to a minimum. All this will involve considerable material expenditure especially since there is no special-purpose industrial facility for the destruction of chemical weapons in the Russian Federation.

The Committee on Problems of the Chemical and Biological Weapons Convention has been created to coordinate the verification of the fulfillment of international commitments in the sphere of the destruction of chemical and biological weapons. The policy of chemical disarmament in Russia has long needed an agency which would be independent of such powerful structures as the Defense Ministry and enterprises in the military-industrial complex, could carry out the process of disarmament in our country in a highly skilled and objective way, and could worthily represent Russia's interests in the international arena. Academician A. Kuntsevich, the well known scientist, was appointed chairman of this committee. In the past a military chemist, he made a major contribution to the creation of decontamination procedures which render toxic substances harmless and he set up a scientific school.

...Today all Russia's chemical weapons stocks are housed in special-purpose arsenals of the Russian Federation Defense Ministry—these are the seven chemical "thorns" in Russia's side: the city of Kambarka and the settlement of Kizner (Udmurtia), the settlement of Gornyy (Saratov Oblast), the city of Shchuchye (Kurgan Oblast), the city of Pochev (Bryansk Oblast), the settlement of Leonilovka (Penza Oblast), and the settlement of Maradykovskiy (Kirov Oblast). The total quantity of chemical weapons is 40,000 tonnes, made up as follows: organophosphorous toxic agents (sarin, zamin [as transliterated], and VX)—32,300 tonnes; mustard gas, lewisite, and their compounds—7,700 tonnes; and phosgene—5,000 tonnes. If the Paris convention is ratified, the process of the destruction of these weapons should begin in 1997.

To enable the Russian Federation to fulfill its international commitments, the Committee on Problems of the Chemical and Biological Weapons Convention under the Russian Federation President, in conjunction with the Russian Federation Defense Ministry, the Russian Federation Ministry of Ecology, the Russian Federation Ministry of Health, the Russian Academy of Sciences, and other ministries, elaborated in 1992 the draft first stage of the comprehensive program for the destruction of chemical weapons. Leaders of local administrations and representatives of public organizations in those regions where it is planned to site facilities for the destruction of chemical weapons took part in the discussion of this program. The draft was adopted after comments, amendments, and clarifications.

An essential condition of work on the draft is the public discussion of proposed decisions, a state ecological feasibility study of them, and the elaboration of the corresponding legislative acts. It is also recommended that a

federal targeted program be elaborated to eliminate the consequences of the production of chemical weapons on the territory of the Russian Federation.

The chemical "thorns" can be removed from Russia's side only if there is a skilled, comprehensive, and well-balanced approach to the problem of the destruction of chemical weapons and joint efforts by scientific specialists, state and public organizations, and the local administration and population of the regions where the installations for the destruction of chemical weapons, one of the most treacherous types of weapon of mass destruction, are to be sited.

Program Developed To Control Pollution From Rocket Program

LD1401011994 Moscow ITAR-TASS World Service in Russian 1235 GMT 13 Jan 94

[By ITAR-TASS free-lance correspondent Semen Ivanov]

[Text] Moscow, 13 Jan—The impact of rocket launches into space is most marked in the fall zones for the residue of spent carrier rockets. At present, 18.8 million hectares of land in the territory of four CIS states (Russia, Kazakhstan, Uzbekistan, and Turkmenistan) are employed as fall zones, and the Plesetsk cosmodrome uses almost half of this—9 million hectares of Russian land—for this purpose.

The Ecos program to improve the ecological situation in the fall zones, which involves the cleanup of fallen spent rocket elements, a decrease of rocket fuel remnants from spent carrier-rocket stages, and a reduction in the amount and size of fall zones, is at present being implemented using Russian Defense Ministry funds.

The largest fall zone area—in Archangel oblast—is 3.5 million hectares (almost 6 percent of the oblast's total area). Ecological cleanup subunits begin their field season there every July. The servicemen gather into containers the fragments of carrier-rocket stages, which are then taken to storage depots.

Almost 4.5 million hectares of land in Russia is used as fall zones for the spent parts of carrier-rockets launched from the Baykonur cosmodrome, over half of this land being located in Tomsk Oblast (about 2 million hectares) and Novosibirsk Oblast (almost 1 million hectares).

In 1993, the fall zone areas for the first stages of the R-7A family of carrier-rockets ("Soyuz" and "Molniya") were reduced by 10 percent. This process is continuing. About 500,000 hectares will be returned to users in Tomsk and Novosibirsk Oblasts because seven fall zones have ceased to be used. In this connection, specialists emphasize that the problem of reducing fall zone areas can be radically tackled only if one employs the controlled descent of spent carrier-rocket elements on aerodynamic structures that can be unfurled such as parachutes, paragliders, and air balloons. However the Russians

have no money to fund this work. The Russian Federation Parachute-Building Research Institute has had to develop a gliding parachute, although it was indeed for the French Ariane-5 carrier-rocket.

Energy Ministry Denies Plutonium Dumped in Siberian Lake

*LD2101161294 Moscow INTERFAX in English
1403 GMT 21 Jan 94*

[Text] An official from Russia's Atomic Energy Ministry has denied writer Ales Adamovich's statement that a quantity of plutonium had been dumped into one of the Siberian lakes.

Vladislav Kotlov, a senior official at the Atomic Energy Ministry's press service, told Interfax that the statement of Adamovich, who said on Thursday that about a ton of plutonium was buried in a lake in Tomsk Region about 20 years ago, was absurd because a ton of that material costs billions of dollars.

Besides, Kotlov said, the Siberian Chemical Plant, situated in Tomsk Region, had been burying all its radioactive waste underground, though in an area with subsoil waters. This was confirmed by the Atomic Energy Ministry's press service, which said the buried waste had a total radioactivity of one billion curies.

Kotlov said laws were due to come out shortly banning the burial of radioactive waste underground in areas with subsoil waters. "There are no guarantees that there will be no earthquakes in areas where burial sites are located, which may lead to the spread of radioactive substances," he said.

There are also underground burial sites near Krasnoyarsk (Siberia) and Dimitrovgrad (Ulyanovsk Region), Kotlov said.

Sources in the Ministry of Environmental Protection and Natural Resources, Gosatomnadzor (the State Nuclear Inspectorate) and the Tomsk Regional Environmental Committee told Interfax those bodies had no data to confirm the information of Adamovich, who said he had documents to prove his statement.

Japanese Offer of Nuclear Waste Storage Tanker Rejected

*LD2001164094 Moscow ITAR-TASS in English
1611 GMT 20 Jan 94*

[By ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow January 20 TASS—Russia rejected a tanker offered by Japan for the storage of liquid radioactive waste after a commission of Russian experts examined the tanker and came to the conclusion that it

was not suitable for this purpose because of its characteristics and present condition, according to an official of the Russian Ministry for Environmental Protection and Natural Resources.

When it gave up last October dumping liquid radioactive waste into the Sea of Japan, the Russian side counted on foreign assistance, specifically that of Japan, in building a storage for this waste in the Far East. However, so far Russia has not been rendered such assistance. For this reason, the issue of dumping radioactive waste in the Sea of Japan is left open.

According to the ministry official, Japan did not restrict its initiative by offering Russia one tanker only. The other day, two more tankers have been offered, which are to be examined by Russian experts in near future.

Khabarovsk Kray Monitoring Background Radiation Changes

*PM2001092394 Moscow IZVESTIYA in Russian
20 Jan 94 First Edition p 1*

[POSTFACTUM report under the "From Our Correspondents and News Agencies" rubric: "Monitoring of Changes in Background Radiation Begins in Far East"]

[Text] The first regional center in Siberia and the Far East for monitoring changes in background radiation throughout the territory of Khabarovsk Kray has begun work in Khabarovsk.

The "Radon" Far Eastern Special Combine for the Collection and Burial of Radioactive Waste has implemented this project, and its specialists have already in a short space of time installed about 10 sensors which record any increase in the level of gamma radiation, including at the only special nuclear storage pit for dangerous waste in the Far East, near the settlement of Chirka. The project's cost exceeds 20 million rubles.

Linking AES's to Accelerators Offers Safety, Cost Benefits

PM1901154394 Moscow Russian Television Network in Russian 1310 GMT 12 Jan 94

[From the "M-Trust" program: Report over video about new power generation concept; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [131118] [Unidentified correspondent over video of exterior, interior of unidentified nuclear power station] As is generally known, despite all the advantages of electricity generation at nuclear power stations, there is also one great disadvantage—the likelihood of the occurrence of an uncontrolled reaction, an explosion, or a meltdown of the active zone of the reactor. We all recall the Chernobyl tragedy and other similar accidents.

Now a new concept has been submitted to the European Organization for Nuclear Research—generation of electricity at a nuclear power station linked with a particle accelerator. The new reactor will be operating in a subcritical mode which rules out the occurrence of a chain reaction. The electricity will be supplied from particle accelerators. According to experts the new power generation technique will be competitive since it does not require new technological development while at the same time providing an ecologically relatively clean, inexhaustible, and reliable source of energy. [131205] *[video shows exterior, interior of unidentified nuclear power station, meeting, followed by more installations]*

Nuclear Physicists Claim Development of 'Safe' Reactor

PM2401103794 Moscow ROSSIYSKAYA GAZETA
in Russian 21 Jan 94 First Edition p 3

[Article by Vyacheslav Kryuchkov and Gennadiy Der-novoy, leading specialists at the Institute of High Energy Physics, under "Sensation!" rubric: "Explosive Idea, But There Will Be No Disaster"]

[Text] Protvino, Moscow Oblast—The Chernobyl disaster bluntly raised the question: Should we have nuclear power or not? These worries are understandable. An accident whose probability is assessed as "one incident in 10,000 years" occurred at the initial phase of the mass operation of powerful nuclear reactors. Should we be surprised at the demonstrations by "greens" at AES [nuclear electric power station] units in operation, and the bans and all kinds of restrictions which have swept across the whole world? However, it is easier to impose a ban than to build a safe AES. Scientists from many countries have continued to struggle over the problem. These include employees of our High Energy Physics Institute. And today we can say: A safe method of producing nuclear power has been found.

For those who have forgotten their school physics course, we will remind you: A conventional nuclear reactor works on the principle of a self-propagating chain reaction. The operating regime has been selected to ensure that the number of neutrons is constant all the time and is strictly monitored. The balance is utterly precise, otherwise an explosion would ensue. However, even the most complex multiple backup systems for monitoring and automatic protection control only reduce the risk of an accident.

But we have elaborated a fundamentally different method of producing nuclear energy which rules out the very possibility of a disaster. The essence of it is that the subcritical reactor—that is, one that is not operating of its own accord—is illuminated by a beam of particles dispersed in an accelerator. Splitting the nuclei they meet in their path, they generate a powerful, rapidly expanding cascade of secondary particles. These in their turn split a large number of target nuclei. There takes place a complex multistage process of the birth and

capture of the gradually decelerating particles, at the end of which the division of the nuclei occurs, as in a conventional reactor, accompanied by the release of an enormous quantity of energy. In other words, the process only operates when the accelerator is working.

The idea of the new energy producing system is attractive not just because it means that repetitions of disasters on the scale of Chernobyl are impossible. The likelihood of smaller accidents at AES's, caused by a leakage of the cooling agent in the active zone, is also decreased. Special requirements for the construction materials in the subcritical reactors also enhances its [as published] safety. Furthermore, nonenriched uranium can be used in them, which decreases both the cost of the energy obtained and the risk of the uncontrolled use of enriched uranium. We should add that the subcritical reactor produces not only energy but also the additional nuclear fuel by which it operates.

We have spoken several times about our discovery in scientific publications. Announcements have been made in the open press too. And suddenly there are "sensational reports" that in Switzerland the physicist Carlo Rubia has developed a new "direction in nuclear power engineering." As it turned out, the essence of this direction coincides with what we have described. Truly, there is no prophet in his own land. However, we are prepared to argue about who should bear the palm. But for us, something else is far more important at the moment: Why has a safe reactor not yet been built? The answer is simple: There is no money. All the research on this topic in our institute has been done by a group of specialists on the basis of enthusiasm alone. The money allocated is not even enough to operate the unique accelerator. It is standing idle, while the construction of an accelerator-accumulator complex has essentially been frozen. The following question begs to be asked: What is more advantageous—to find money to build safe AES's today, or to seek out money tomorrow to eliminate new Chernobyls?

Fishing Vessels Seal Off Disputed Area in Okhotsk Sea

LD2201143594 Moscow Radio Moscow World Service
in English 1200 GMT 22 Jan 94

[Text] Russian vessels fishing on the border between Russia's economic zone and a disputed area in the Sea of Okhotsk exploited by foreign boats have sealed off the area in the north and northeast.

Leader of the Russian Fish Workers' Trade Union Viktor Zeryanov told Interfax the Trade Union considered inadmissible the government delay on the issue of stopping fishery in this area and demanded urgent measures to enforce its protection.

Russian experts fear uncontrolled fishery by foreign boats may considerably reduce fish reserves in the Sea of

Okhotsk and ruin its ecosystem which is [word indistinct] with serious socioeconomic aftermath for the indigenous population and fishers of the Far East.

Yablokov at Odds With Environment Minister Over State of Ecology

94WN0140A Moscow NEZAVISIMAYA GAZETA
in Russian 13 Jan 94 p 6

[Article by Aleksey Yablokov, chairman of the Security Council Interdepartmental Commission for Environmental Safety: "The Ecological Condition of the Country Is Catastrophic: Response to the Minister of Environment and Natural Resources of Russia"]

[Text] "In the past three years there has been no deterioration in the ecological situation in the country as a whole," "...today's situation may be assessed more optimistically than before," "...the most dangerous spheres ... we are keeping under constant supervision." All these assessments of Viktor Danilov-Danilyan, minister of environment and natural resources of Russia, contained in his interview in NEZAVISIMAYA GAZETA (No. 251 (675) of 30 December 1993) are so different from what is actually happening in Russia that it is hard to remain silent. I cannot remain silent for the added reason that the gentleman minister has also appreciably distorted my positions in the sphere of the country's environmental safety.

In fact, the ecological state of the country is not simply disturbing, it is catastrophic. Russians' life expectancy is falling precipitously, and the number of diseases connected with the poor state of the environment is growing. A boy born in 1993 has few chances of reaching retirement age. Inasmuch as the state of the environment is responsible for approximately 30 percent of our health, one year out of the three years of decline in average life expectancy in 1993 is accounted for by the environment.

Soil-degradation processes are intensifying. The scale of the country's radiation contamination has not been reduced. Each year in Moscow and other large and small cities there are hundreds of sources of dangerous radiation. Among the reasons for the radiation contamination are the accidents at sites of radiation danger, the unthinking use of radioactive materials, the destabilization of the work of the radioactive waste burial services, and the penetration of our territory by foreign waste. The ozone hole over the country is getting larger. Last year it was the largest in all the years of observation. This means thousands of additional deaths and dangerous consequences for agriculture and live nature.

The expanding poaching has brought the Amur tiger and a whole number of other protected animals to the brink of extinction. The state of fish resources is characterized by a single word: plunder. The poaching of sturgeon in the Caspian and the Volga, which has exceeded all conceivable bounds, is making realistic the complete termination of their catch within two years and the destruction of a number of sturgeon as species within a

few years. The Ministry of Environment and Natural Resources has not yet complied with President Yeltsin's instructions of more than a year ago that sturgeon be accorded the status of federal natural resource (some attempt at protecting them, at least!).

The broad-based contamination of the country as a result of breaks in the oil and gas pipelines continues. The area of forest is being reduced, and serious pollution of Baykal continues. The destruction of the sites of the traditional use of natural resources of the small peoples of the North is not being reduced but expanded. The scale of the rise of ground water on the country's territory is increasing (40 percent of the territory is threatened with rising ground water in Moscow).

I have listed far from all our ecological disasters. But even this is sufficient for evaluating the words of the gentleman minister quoted above as being very far from reality.

"Neither I nor the Ministry of Environment and Natural Resources have yet been defeated on a single matter of principle," the minister maintains. How much self-deception there is in this claim is not that important. In actual fact, the Ministry of Environment and Natural Resources has not won on a single major issue. In the two years and six months of its existence the ministry has not resolved one of the main problems of state administration in this sphere: A formula of the optimum combination of the need for federal regulation of the use of natural resources and supervision of wildlife management with the right of components of the Federation to use their natural resources has not been found. The public funding of the sector is such that the entire system of the Ministry of Environment and Natural Resources is close to collapse. The plunder of natural resources is not diminishing but increasing. The Ministry of Environment and Natural Resources has yet to devise all the necessary standards and rules ensuing from the law on environmental protection adopted more than two years ago. The minister, as chairman of the government commission, held up for more than a year the development of a system of measures ensuing from the decisions of the UN Conference on Stable Development which Russia signed in Rio de Janeiro. The ministry has on dozens of occasions in the past two years occupied the position of detached observer at the time of the government's adoption of decisions dangerous for the ecological state of the country. The principle of the separation of state administration of the use of natural resources from state supervision of wildlife management, which has been established by law, has not been put into practice (hunting and fishing resources, for example, are used and supervised by the same structures). The ministry has not organized the efficient work of the federal Ecology Fund. The system of wildlife areas, which was for a long time a model for other countries, is falling apart on account of a lack of funds. The interestingly conceived "Environmental Safety of Russia" program has one foot in the grave. The natural-resource bloc in the government has

not succeeded in realizing the idea. If none of this is not called a defeat, what, then, is a defeat?

I shall dwell in more detail on the government's decision on the development of nuclear power engineering of 28 December 1992, which the gentleman minister mentions repeatedly. I spoke at that session about the impermissibility of a resumption of the construction of nuclear electric power stations for ecological, legal, and economic reasons. The law does not permit the adoption of such decisions without the positive findings of expert ecological appraisal. This was confirmed at that same session by Justice Minister Nikolay Fedorov (today president of Chuvashia) also. All was decided, however, by the speech of the minister of environment, who supported, however monstrous, the position of the Ministry of Atomic Energy. Public anger at this decision of the government developed into an appeal to the Constitutional Court, which, as we know, took over this case.

I emphasized once again at that session that I am not an opponent of nuclear energy in principle (as the gentleman minister tries to portray me), but I am for its environmentally safe development. In Russia, however, the development of nuclear power engineering according to the proposed plans entails unacceptable environmental risk. It is indicative, incidentally, that several months later the State Expert Ecological Appraisal (in the absence of the gentlemen minister, it is true—perhaps the status of "politician," as he calls himself, was reflected here) declined to approve the program of development of the country's nuclear power engineering presented by the Ministry of Atomic Energy. And, of course, our gentleman minister dissembles, to put it mildly, when he says that that ill-fated decree made no provision for the funding of the Ministry of Atomic Energy. It was merely to untie the Ministry of Atomic Energy's hands in the funding of the sector that this decision was adopted!

I am forced to censure the gentleman minister at least for incompetence for his claim that that decree contained no "specific projects that experts could examine." Both in accordance with the law and in accordance with IAEA rules, the choice of site is the first part of construction. To what expert ecological appraisal was the decision on the choice of sites for the Far East, Kostroma, and other nuclear power stations, of which the government decree makes mention, put?

There has long been the need for public discussion of all problems of the development of power engineering: It first needs to be decided how much energy we need and where, and then we need to determine from which sources to obtain this energy. Meanwhile, however, it would seem that we do not have a shortage but a surplus of energy, and we should not be building up capacity but learning from other countries how to consume half as much energy per unit of manufactured product.

I would add that the Ministry of Environment and Natural Resources has done little as yet to attract attention in Russia to the new progressive sources of energy—steam and gas turbines, the technology of the combustion of coal in a fluidized bed, and others. Yet there are calculations showing that the replacement of all nuclear power station units (not only those being withdrawn owing to old age) by environmentally acceptable energy sources would be for Russia several times (!) cheaper than bringing the current nuclear power stations up to safety requirements similar to their Western counterparts.

Now a little about the minister as a politician (this, I would recall, is what he called himself).

It had become clear at the start of 1992 that neither the ministry, nor the government, nor the Supreme Soviet had the resources for resolving the problems of environmental protection. A "mustering of all units" was needed, and the First All-Russia Ecology and Environmental Protection Congress, which could have adopted a program of Russia's ecological revival, was seen as being such. Earlier such programs had been adopted by the CPSU Central Committee and the Council of Ministers, but this could no longer be done now by the competent structures alone without the most active participation of industrialists, science, the banks, and the public. All were agreed that such a congress needed to be prepared as a matter of urgency, and the corresponding action program, which had been discussed at the Ministry of Environment and Natural Resources Collegium, was drawn up. But the minister personally revised the decision of the collegium and persuaded A. Rutskoy to head the organizing committee preparing the congress. The latter agreed, provided, it is said, that he would not be burdened with any congress business. This buried with full honors the whole idea of the congress: The minister needed not a congress but political proximity to Rutskoy, and Rutskoy needed a congress even less. So an ecology congress did not take place in 1993. Now the idea of the congress has been taken up by the trade union movement. I very much hope that such a congress will be held, for all that, and will assist this as best as I can.

And I would like to say this, further, about politics. The gentleman minister explains his involvement in the elections on the Russia's Choice platform by the fact that this movement "expressed interest in the development of a strong ecological program." But where is it, this strong ecological program, and why has our government up to now declined to develop and implement it? For anyone with an interest in the parties' and movements' ecological programs it is obvious that the Russia's Choice ecological program is far from the strongest. It would seem that it was not ecological but some other policy which guided the minister in this case, as in the case with A. Rutskoy also.

Not only my attention, I believe, was attracted by the minister's attempt to justify the combination of positions in the government and in parliament by an analogy

with other countries. In other countries the situation is fundamentally different from ours, there the members of the party which is the winner at the elections become ministers. With us, on the other hand, ministers occupy the seats of deputies. And it is quite odd when a minister is elected by territorial constituency. How can he combine the duty of serving primarily the interests of his constituency with his federal obligations of not having "favorites" in the regions? I would recall that our minister attempted to get elected from Nizhegorod Oblast (because, perhaps, there are many Ministry of Atomic Energy enterprises there) and that only after having failed there was he included in the extraterritorial part of the Russia's Choice federal slate.

A progressive economist who understands that a sound economy may exist only with a sound ecology was proposed for the position of minister in November 1991. It is said that Suvorov, shaken by the scale of the embezzlement of public funds, maintained that any supply officer could after a year be executed without trial or investigation. It would seem that the minister of environment, even if very good at the time of his appointment, needs to be removed after 18 months at the most: A person is incapable of resisting for any longer than this the pressure of his superiors, minister friends, and foreign companies.

The gentleman minister's striking super-optimism, whatever the subject—the efficiency of the work of the ministry or of himself or the quality of the environment—is helping him, evidently, justify his own inconsistency and indecisiveness in defense of the environment. But for the state and society and for us all this political position of the minister is simply dangerous.

P.S. As presidential adviser for the environment and health care in 1991-1993, I was largely responsible for the failures in the sphere of ecology that have been described, as also for the self-appointment of Professor V.I. Danilov-Danilyan as minister. The Statute on the Security Council of Russia Interdepartmental Commission for Environmental Safety, recently approved by the president, records: "The commission's decisions... are to be examined by the organs of state power...." If also I fail to achieve serious results here, I will have to move to nongovernment structures in order to start all over again—to organize public pressure on the persons adopting ecologically dangerous decisions.

Danilov-Danilyan Examines Key Ecological Issues for Russia

94WN0137A Moscow NEZAVISIMAYA GAZETA
in Russian 30 Dec 93 p 6

[Interview with Viktor Danilov-Danilyan, Russian minister of environmental protection, conducted by Andrey Bayduzhiy under the heading "Firsthand: Viktor Danilov-Danilyan: 'A Minister, Even a Minister of Environmental Protection, Is Still a Political Figure'"]

[Text] Viktor Danilov-Danilyan was born in Moscow in 1938. He is a 1960 graduate of Moscow State University's Department of Mechanics and Mathematics. He got his scientific training (in 1964-76) working at the USSR Academy of Sciences Central Institute of Economics and Mathematics, a center of "economic dissent" where mathematics served as the Aesopian language of market-oriented economists. In the latter half of the 1970's he was head of a laboratory at the USSR Scientific Research Institute for the Study of Systems. In the 1980's he established and headed the Department of Ecology under the USSR Council of Ministers Economic Academy. He took charge of the Ministry of Environmental Protection and Natural Resources in late 1991. Danilov-Danilyan is a doctor of economic sciences and a professor. He is married and has two sons.

Bayduzhiy: What is your assessment of the current environmental situation in Russia?

Danilov-Danilyan: It is very alarming. Ecological systems are very vulnerable, and the first steps toward destruction of our country's environment were taken back in the 1930's, when we began industrializing without the slightest regard for the environment. There was the Stalinist plan for transformation of nature, a plan that declared human beings to be nature's master. We did not renounce that concept even when in the late 1960's all the developed countries concluded that we must live in harmony with nature.

The current environmental situation was almost fully defined 10-12 years ago, i.e. in the early 1980's. That applies both to Russia as a whole and to its individual regions. An additional "contribution" was made by the Chernobyl disaster in 1986. Over the past three years our country's environmental situation has on the whole not worsened. That is due to two factors. Firstly, the decline in production has played a certain role, due to the accompanying decrease in pollutant emissions. Though for fairness' sake I must add that the decrease in industrial pollution has been smaller than the drop in production. There is nothing surprising about that: the first thing that enterprises do when they find themselves in a difficult situation is to cut corners on environmental protection. First they shut down pollution control equipment, and only after that do they shut down production operations. Nevertheless, the amount of pollutant emissions in Russia has gone down.

The second factor that has prevented the state of the environment from worsening in recent years is that beginning in 1988 our country began taking steps to create an environmental protection system. 1988 was the year that a USSR environmental protection agency was established, followed by republic and local agencies. These organizational steps, accompanied by the introduction of an economic mechanism to regulate natural resource use, have definitely produced a positive effect. In December 1991 a law entitled "On Environmental Protection" was passed, making environmental impact assessments mandatory for all projects. Incidentally, that

stipulation is being followed very strictly. In 1992 more than 55,000 project documents were prepared at the federal and regional levels, and nine percent of them were rejected in their entirety. In 1991 30 percent of all documents were rejected. That means that people have become afraid of environmental impact assessment and are no longer submitting outright nonsense for assessment.

However, not all documents undergo environmental impact assessment, particularly those adopted at the highest level. For example, when the government passes a decree regarding development of a system of Black Sea ports, we cannot do an impact assessment of that document, simply because it does not outline any specific projects. Hence the conclusion that we need to expand the range of documents that undergo assessment. It will be necessary to pass several legislative acts before we can do so, and I think those acts will pass in 1994.

Bayduzhly: How is the system of pollution payments structured?

Danilov-Danilyan: At the present time those payments are distributed between non-budgetary environmental funds and the budget. Overall, 90 percent of pollution payments go to non-budgetary funds at the federal level, federation component level and local level. Those three levels receive 9, 27, and 54 percent of the funds, respectively. That is to say, more than one-half of all environmental protection money remains directly at the local level and is used for specific environmental protection projects.

Bayduzhly: Currently many environmentalists are arguing over how to assess the environmental situation in Russia—as a crisis or a full-blown disaster. Which viewpoint do you support?

Danilov-Danilyan: Neither one. One can only speak of a crisis situation with regard to a number of urban agglomerations and aquatic systems. For example, a crisis situation exists along the Iset River, which flows through Yekaterinburg, and in Lake Ladoga, and thus in the Neva River as well. Even the situation on the Volga is still in a pre-crisis state, though of course that is no reason for complacency.

Nor should we forget that Russia has 7 million square kilometers of land that have not been touched by commercial activity in any way whatsoever. No other country in the world has that. Excluding Antarctica, that is only a little bit less than in all the rest of the world combined. Therefore, if we were to talk in terms of a human ecological reserve, then lands in Russia would comprise the largest section of it. Essentially this includes one-third of Russia's territory.

Bayduzhly: Are you more optimistic about the prospects for improving our country's environmental situation now than you were when you became minister?

Danilov-Danilyan: You know, strange as it may seem, the answer is yes. For example, when I became minister I was not certain that we would be able to collect pollution payments the way we should. Now that is happening. Of course, many enterprises simply do not have the money to pay, but that is another problem. Their debt continues to accumulate; the system itself is functioning. The problem is not the system, but rather our country's economic situation. I also had serious doubts about whether we would be able to get the environmental assessment system going. But now it is up and running. So in terms of many parameters one can view the situation in a more optimistic light than before.

Bayduzhly: What is your view of Russian Navy dumping of radioactive wastes in the Sea of Japan and the events that followed?

Danilov-Danilyan: The problem of how to deal with the radioactive wastes generated by nuclear submarines and icebreakers has been ignored for decades. We have accumulated a huge quantity of liquid radioactive wastes, which we have traditionally dumped at sea. All this was described in detail in a "white book" published in April 1993, a report containing data which even Western governments, our negotiation partners, are not eager to release. Maybe we revealed even more than we should have, but that is a different topic. It is clear that the process of liquid radioactive waste creation cannot be halted all at once, even if every nuclear reactor were to be shut down. In late summer 1993 our eastern bases experienced a critical situation, with all their storage tanks filled. Unless unloaded, one of the tankers could have literally fallen apart, and that is essentially what did happen to it a short time later. The decision was made to dump—there was no other choice—900 cubic meters of polluted water with a total radioactivity of 0.38 curie into the Sea of Japan. That is an insignificant amount of radioactivity; that much is literally flying around in the air. By way of comparison, a conventional coal-fired heat-and-power station with a capacity of one million kilowatts releases at least one curie each day. Large stations release 15-20 curies into the air every day. The dumping was carried out in Russia's economic zone, 180 kilometers off shore, in a part of the sea that is more than 3,000 meters deep. In the tanker's wake followed a hydrographic vessel, which failed to discover any levels in excess of normal background radiation. Therefore it is frivolous to say that ecological damage was done to anyone. A few days ago Japan officially acknowledged that. Japan's discharges of industrial waste into the Sea of Japan do the environment incomparably greater harm. There is no way to describe the uproar over the Russian liquid radioactive waste as anything but hysteria. However, that in no way means that efforts should not be made to find a solution to the radioactive waste problem. A report has already been prepared on a whole range of pertinent issues. In the near future it will be presented to the government and to countries that have expressed a desire to provide Russia with technical and financial assistance with its radioactive waste processing. Those are the United States, Canada, Norway,

Holland, Japan and South Korea. Relying on our own efforts alone, the earliest we could end dumping of radioactive wastes at sea would be after the end of 1995.

Bayduzhly: Each day Russia experiences two accidents on oil and gas pipelines, it has one train wreck a week, and it has a major industrial accident once a month. Do you have the impression that we are on the verge of another Chernobyl?

Danilov-Danilyan: Actually, no, though to make any promises like that would be the purest foolhardiness—anything is possible. However, the most dangerous industries, those where a disaster could have the most serious consequences, are closely monitored by us. Nuclear power plant operations have become much more orderly. Even the International Atomic Energy Agency just recently, to my great surprise, acknowledged that Chernobyl-type reactors, the RBMK, may continue to be operated, i.e. that they do not significantly deviate from international safety standards. That also came as a surprise to many technical specialists.

Bayduzhly: But in addition to nuclear power facilities we also have at least as many hazardous facilities in the chemical and metals industries...

Danilov-Danilyan: Yes, these are indeed extremely hazardous things. For example, chemical plants in Dzerzhinsk, or Aramas-16, also located in Nizhegorod Oblast, where nuclear warheads are being disassembled under conditions that are, quite frankly, not 100 percent adequate. There are plenty of problems, but I want to reiterate that the most dangerous areas are being monitored with particular vigilance by the Russian agencies for the oversight of atomic and industrial safety and our own agencies. In contrast to 1986, when the Chernobyl disaster occurred under circumstances of completely idiotic complacency, now we are already on our guard.

Bayduzhly: What is your assessment of the current "green" movement in this country?

Danilov-Danilyan: It is extremely weak and divided. Often there are several groups active in each local area, competing with one another, and each of them taken individually is very insignificant. I would say that the most solid environmental organization is the Volga parliament called "Revival of the Volga" [Vozrozhdeniye Volgi]. But once again, the committee to save the Rhine in Germany was much stronger at the time when the Rhine was in the same condition that the Volga is today. Therefore this is all relative. It is very regrettable that many "green" groups and movements actually have purely commercial objectives, attempting to use environmental slogans as a means of attracting sponsor aid from abroad. Worse, for some of them this has become something of a lifestyle. A significant number of environmental groups are also notable for their very nihilistic attitude toward the law. The classic example of that is Greenpeace, which has chosen provocation of the authorities as its method of action. It is deliberately oriented toward confrontation. That organization often

chooses its priorities very incorrectly, making a big deal out of insignificant events while overlooking real environmental damage. Aleksey Yablokov, the president's advisor on environmental affairs, recently put forward the idea that environmental goals are not the only reason behind that, and that Greenpeace's funding does not just come from members' contributions. I became convinced of that a long time ago. Greenpeace is backed by the very specific economic interests of structures that are not at all difficult to discern if one takes a close look at its activities.

Bayduzhly: Some experts, among them the aforementioned Aleksey Yablokov, feel that the ministry you head has not proven able to withstand the bureaucratic pressure exerted on it by various other ministries and agencies. One example cited is that the Ministry of Environmental Protection and Natural Resources expressed support for a nuclear power development program without requiring an environmental impact assessment...

Danilov-Danilyan: Those who are of that opinion would like for the Ministry of Environmental Protection and Natural Resources to behave the same way the "greens" do at their rallies. We are a state organ and must operate in accordance with existing laws, whether those laws be good or bad. The ministry may take the initiative in regard to changing a law, but under no circumstances may it violate the law. We cannot demand that nuclear power stations be shut down and atomic industry be eliminated merely because they are atomic. If you will take a look at the minutes of that same government session which considered the aforementioned program, you will see that it was I and I alone who insisted that the decision include a requirement that environmental impact assessments be done on future projects. I regard as unacceptable the position of complete rejection of this program as taken by Mr. Yablokov—each year we have dozens of disasters in rail transportation, so why not shut down the railroads as well? Another problem lies in the fact that, as I have noted, under the law not every document may be subjected to environmental impact assessment, and a government decree is one such document. This decree does not contain any specific projects that experts could study from an ecological standpoint. Technical oversight of nuclear power plants comes under the jurisdiction of Russian Federal Oversight of Nuclear and Radiation Safety, which has been very active of late. Funding for this decree was not released, only envisioned—in the event of a positive environmental impact statement.

Bayduzhly: But have there been cases in which you have had to give in and make concessions? In other words, have you lost the fight with various ministries and agencies?

Danilov-Danilyan: There has not been a single fundamental issue on which either I or the Ministry of Environmental Protection and Natural Resources have yet

suffered a defeat. Yes, there have been difficult situations, but we have managed to defend successfully all the most important points upon which the environmental protection system in Russia is currently based.

Bayduzhiy: What is the future of the "Komsomolets?"

Danilov-Danilyan: A plan has been created to render the submarine harmless there on the sea floor. That plan will soon be submitted for environmental impact assessment, and the assessment will be a serious one. We currently have two forms of environmental assessment—single-stage and two-stage. In the former case all that is needed is a finding by a commission of experts. In the latter case, when a project is particularly complex and ambiguous, as was the case with the Northern Heat and Electric Power Station, for example, the plan is also reviewed by the Council for State Environmental Assessment. So before anything is done with the "Komsomolets" each step will be strictly checked out and planned out.

Bayduzhiy: You were elected to the State Duma on the Russia's Choice slate of candidates. Why exactly did you choose that association and not, for instance, Cedar, which has made environmental demands the core of its platform?

Danilov-Danilyan: My economic views coincide with the concept of Russia's Choice, which has also expressed an interest in developing its own strong environmental platform, and I decided that there would be something for me to do in that bloc... In my opinion the accusations of conflict of interest that people are so fond of repeating will not stand up to criticism. In a majority of developed countries it is the rule rather than the exception for ministers to also serve as deputies in parliament. Due to the nature of my job I have to meet with many heads of foreign environmental protection agencies. For instance, in the FRG, the Netherlands, Denmark, Norway, France, Finland and Italy (where there have been four different ministers of environmental protection in the past two years) the ministers of environmental protection are all members of parliament. That is quite logical: ministers, even ministers of environmental protection, are political figures, and when one of them does not get into parliament that is seen as a scandal. As for Cedar, according to my observations the backbone of that movement is comprised of businessmen who have adopted environmental slogans just to win seats in the Duma. I could only find one respected ecologist in their entire slate of candidates. It is not surprising that in the acronym for Cedar [Kedr] the word "ecology" [ekologiya] was transformed into "yekologiya."

Bayduzhiy: Which current environmental issue do you regard as the most important to Russia?

Danilov-Danilyan: The prevailing opinion that our present sad environmental state is due to Russia's economic problems is only partially correct. Paradoxical as it may seem, our main environmental problems are still beyond the grasp of our public consciousness. The birth

of a single child in a post-industrial country creates an environmental burden 300 times greater than the birth of a child in a developing country. When asked when India could equal Great Britain's level, Mahatma Gandhi replied: "In order to achieve its prosperity Britain has consumed the resources of half the planet. How many planets would it take for a country like India to achieve that level?" And so the main environmental issue is human beings' reassessment of the entire system of values by which they live. And that it is not a timely issue for Russia alone.

Leaked Aircraft Fuel Forms Underground Reservoir

*PM2701170194 Moscow KOMSOMOLSKAYA
PRAVDA in Russian 27 Jan 94 p 1*

[Unattributed report in "Inform" roundup: "Saratov Emirates"]

[Text] A kerosene vein occupying 459 hectares northeast of the city of Engels in Saratov Oblast has been discovered near a military airfield. Around 467,000 tonnes of petroleum products have leaked out of the airbase, and the "deposit" lies at a depth of seven meters, with individual lenses of pure kerosene between three and five meters thick.

The contaminated area lies not far from the bank of the Volgograd reservoir and is only 500 meters from the Engels city water supply. Over 20 years around 60 tonnes of rocket fuel have also been lost from the fuels and lubricants depot.

The damage to the environment, according to the preliminary figures, is assessed at 24.5 billion rubles. Meanwhile, kerosene "prospectors" are wasting no time: Each morning they drive up and fill their tanks for free. One truckful of illicit fuel earns at least 1 million rubles.

Japan Donating Radiation Leak Detection Device

*PM2701104994 Moscow IZVESTIYA in Russian
26 Jan 94 First Edition p 2*

[INTERFAX report in "From Our Correspondents and News Agencies" column: "Japan Helps Diagnosis at Russia's Atomic Power Stations"]

[Text] Russian and Japanese specialists have started installing a Japanese acoustic device for the detection of radiation leaks from nuclear power units at the Leningrad nuclear electric power station, which is fitted with (Chernobyl-type) RBMK-1000 [high-power pressure-tube] reactors.

The piece of equipment, worth more than \$900,000, has been supplied by the Japanese side as part of the Russian-Japanese Intergovernmental Agreement on Cooperation on Safety in the Nuclear Power Industry, signed in 1993. According to the Japanese experts taking part in installing the equipment, if the cooperation is successful

the two countries' specialists propose to set up within the next two to three years a uniform integrated diagnostic system for this type of reactor and to equip another two Russian nuclear power stations with it.

Nuclear Waste Processing Plant Being Built on Credit

PM2601172594 Moscow Russian Television Network in Russian 1100 GMT 24 Jan 94

[From the "Vesti" newscast: Video report by A. Peslyak, identified by caption; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [110735] *[Peslyak over video of Japanese, Moscow street scenes, Vladivostok harbor including warships and port installations]* We are very grateful to Japan for its offer to cooperate in nuclear ecology, I was told by a ranking official of the Russian Foreign Ministry. Unfortunately, the inspection of a Japanese tanker has revealed that it cannot be used to store liquid nuclear waste safely. And secondly, we fill up one tanker, and then what? So the main burden will have to be borne by our own resources. A Russian vessel, the "Pinega," which can take 1,000 cubic meters of liquid waste, has been found in the Vladivostok area. There is also a system for processing this waste. Allow me to remind you that "Vesti" has already reported on our technologies for processing liquid waste from nuclear-powered vessels in the North. Now a similar enterprise is being built in the Far East. Thanks to Japanese credit, it has to be admitted. Coping with nuclear waste single-handedly is expensive and difficult. We were told at the Foreign Ministry that in the spring a Russian research vessel, together with Japanese and South Korean experts, will be studying possible dumping grounds for solid nuclear waste in the depths of the Pacific. This means that clean, economical, and long-term solutions to dirty problems can be found by pooling efforts. [110842] *[video shows Japanese, Moscow street scenes, Vladivostok harbor with warships and harbor installations, map, submarines in harbor]*

Krasnoyarsk-26 Installation Pollutes Yenisey

PM2601101994 Moscow IZVESTIYA in Russian 25 Jan 94 First Edition p 7

[Aleksey Tarasov article: "Krasnoyarsk-26 Threatens Global Disaster"]

[Text] Krasnoyarsk—The legacy of the Cold War will not allow Russians to live in peace for some time to come. Quite recently, in 1992, progressive public opinion as a whole rejoiced at the closure of two industrial reactors located in the secret underground complex at Krasnoyarsk-26 that produced weapons-grade plutonium, the substance used to fill nuclear warheads. This event really was something to be pleased about. However, unresolved problems connected with radiochemical production and the territories contaminated by this

nuclear production were swept under the carpet; these problems are now making themselves felt with increasing frequency. What is to be done with the accumulated plutonium and radioactive waste? And finally, what is to be done with the thousands of people who forged the nuclear shield? This entire cluster of problems has come to the fore in the closed city of Krasnoyarsk-26.

Time Bomb

Environmental catastrophe is the natural result of the work carried out by the Krasnoyarsk nuclear scientists. The true scale of the environmental contamination is only now becoming apparent. For almost 30 years liquid radioactive waste from military production has been pumped underground—into the aquiferous sand and clay strata beneath the "Severnny" installation. Radioactive waste is still being pumped today.

According to data published openly in the press, the underground reservoir has received millions of cubic meters of radioactive waste with a total radioactivity level of hundreds of millions of curies. On the basis of its design parameters, this reservoir is now full to capacity. The underground reservoirs are infinitely expandable. Nevertheless, if an additional RT-2 plant is then built to reclaim the spent nuclear fuel, it seems likely that "Severnny" will have to accept tritium.

This installation is unique in many ways. In the opinion of specialists, it is the only storage facility in the world that operates a dual system of injection and discharge wells. As radioactive waste is pumped in, underground stratal water is drawn off. These processes deep underground are monitored via a system of observation wells.

The site of the installation is also extremely interesting—it is located in the Yenisey valley (the distance between the river channel and the edge of the installation is 750 meters) on a high terrace (100 meters above the level of water in the river). Experts are extremely skeptical about the impermeability of the screen designed to stop the radioactive waste from moving toward the river. And, generally speaking, "tongues" of waste, judging from geological maps of the area, can travel unpredictably large distances.

But that is not all. The installation is located in an extremely unfavorable site in geological-tectonic terms. Hydrogeologist A. Goryunov has the following to say: "'Severnny's' location is unique. The fact is that in zones where there are regional faults, the various elements of the earth's crust are arranged in blocks, so to speak, and this basically cannot ensure safe, long-term storage of nuclear waste. Moreover, world experience demonstrates that in geotectonic conditions such as these, there is an increased risk of seismic activity.... These processes are unpredictable. The installation poses a potential contaminatory threat to the Yenisey and the waters of the Arctic Ocean. Accidents connected with leakage of radioactive waste are possible and could be described as serious and global in their implications."

Liquid industrial waste is conveyed to the installation via a 15km-long pipeline. According to V. Savelyev, director of the chemical isotope plant, no cases of radioactive waste leaking to the surface have been noted throughout the period the plant has been operating.

Meanwhile, last fall a public environmental-technical expert study of the installation began. A preliminary conclusion on the results of the investigation into the radiological condition of the soil along the course of the pipeline has already been prepared within the framework of this study. The results have been described as "conflicting."

Your IZVESTIYA correspondent has met with V. Chechetkin, leader of the field investigation and director of the regional center for radioecological studies. According to him, two major areas of radioactive contamination and eight localized spots have been discovered. At the same time, a contaminated sector of the Yenisey floodplain not far from the river bank is causing particular alarm. The streams and gullies located in this region, and also the surface washout, create favorable conditions for the migration of radioisotopes into the general water system. The nature of the contamination leads us to suppose that it may be due to "seepages" [prolivy] of liquid radioactive waste.

Chechetkin also indicates that the site of the installation on the side adjacent to the village of Bolshoy Balchug is unguarded. There are specially-built wells that anyone can use located at intervals of 100-150 meters. There are also organizations not directly involved in nuclear production located in the vicinity of the pipeline. All these constitute additional risk factors.

On the whole, it is obvious to the independent investigators of "Severnnyy" that it should stop operating. More up-to-date methods should be used to recycle radioactive waste.

Yenisey's Nuclear Spoor

In a climate of absolute secrecy, the lucid minds of the Soviet defense industry have been destroying the mighty Yenisey for over 30 years. Water from the great river—the "hub of Russia"—was cleansed of suspended particles and used to cool the radioactive parts of nuclear reactors, after which it was returned to the Yenisey.

Recently a number of expeditions have studied the state of the river. Radioactive contamination of the Yenisey floodplain can be traced from the point where waste has been discharged along the course of the river to the Yenisey Gulf; the contamination occurs in patches. Plutonium-238 and -239, cobalt-60, cesium-134 and -137, strontium-90, and other isotopes have all been found in riverbed sediment, algae, sections of river bank washed by floodwater, shoals, sandbars, and islands. Fish containing man-made [tekhnogennyy] radionuclides have been found both downstream of Krasnoyarsk-26—at distances of many hundreds of miles—and upstream, in the vicinity of Greater Krasnoyarsk. The

investigators caught one fish which positively "glowed" at 580 microcuries per hour.

The plutonium content of the soil in some areas of the floodplain is tens of times higher than the total level of contamination. According to data presented by specialists from the Applied Geophysics Institute and the Krasnoyarsk Scientific Center of the Siberian Department of the Russian Academy of Sciences, the concentration of plutonium in riverbed sediment and this sort of soil is so large that chance wind-borne transfer of contaminated earth and inhalation of the dust by a human being would be equivalent to the maximum permitted annual intake of plutonium into the human organism.

The decades of the Cold War have poisoned this mighty river for a long time to come: Plutonium-239 has a half-life of 24,000 years, and according to scientists, it remains dangerous for 10 times the length of this half-life, that is to say for 240,000 years.

It makes no sense to blame anybody for the madness that has occurred. But it is hard to understand why the tradition of secrecy is being maintained to this day. Even now it is unclear how many curies of long-life radionuclides the combine has discharged into the environment. Information about plutonium contamination of the air, soil, and water remains confidential, despite the fact that data has been published in the United States showing how many tonnes of this deadly substance was produced by the combine, despite the fact that Siberian ecologists know these figures, and despite the existence of calculations about the possible amount of plutonium lost during production.... The nuclear scientists are refusing to release essential documents to the ecologists who are currently studying the state of "Severnnyy."

People should know what conditions they are living in, they are entitled to know where and where not to gather berries, go fishing, and graze cattle. The most dangerous areas should be marked and fenced off. At the very least, we should try to eliminate radioactive contamination from areas along the river bank and close to settlements. But most important of all, research work is currently being carried out and amendments are being made to the project to build the RT-2 plant at Krasnoyarsk-26. It seems that for the Ministry of Atomic Energy and Krasnoyarsk's nuclear scientists, the question of whether or not to go ahead with construction is not even on the agenda. Apart from their natural desire to preserve their cadres, no other arguments are basically being advanced.

Mayak Reprocessing Combine Continued Operation Authorized

PM2501131494 Moscow Russian Television Network
in Russian 1700 GMT 23 Jan 94

[From the "Vesti" newscast: Video report by L. Shesertkina, identified by caption]

[Text] *[Shesterkina voice over video of truck emerging from reprocessing plant]* The Russian Ministry of Atomic Energy, having examined the results of the operation and the state of all units of the complex for the vitrification of radioactive waste at the Mayak chemical combine, has authorized its continued operation. This furnace is the only one on the territory of the former USSR and the most efficient in the world, although this work is also done by Britain and France. Here industrial-grade plutonium for nuclear electric power stations is extracted from reprocessed nuclear fuel and the radioactive waste is vitrified and placed in storehouses. Beneath me are about 150 million curies of radioactivity rendered harmless from nuclear fuel used not only in Russia but also in Armenia, Ukraine, Bulgaria, Slovakia, Germany, Hungary, and Finland. It is all too obvious that, having our own nuclear electric power stations, an inconceivable number of missiles, icebreakers, and submarines, we have accumulated such a quantity of weapons-grade and industrial-grade plutonium, whose decay takes 24,000 years, that we are doomed to conducting our own reprocessing. *[video shows exterior, interior of reprocessing plant]*

Expert Views Ecology, Plans To Open Toxic Waste Dump

WS2801145094 Kaliningrad YANTARNIY KRAY
in Russian 25 Jan 94 p 2

[Interview with N. Sakharlykh, chairman of the Kaliningrad Oblast Ecology and Natural Resources Committee, by S. Tribunko; place and date not given: "Ground—for Dessert to Mother Nature"]

[Excerpts]

Tribunko: How serious is the ecological situation in Chernyakhovskiy rayon?

Sakharlykh: The situation is very grave. The city's water-supply and sewage enterprise is the main polluter. This enterprise yearly discharges more than 6 million cubic meters of untreated sewage into water reservoirs, causing 2 billion rubles [R] worth of damage in 1993 alone.

In 1993, the maximum acceptable level of nitrous ammonia in water exceeded the norm by 71 times, that of phosphorus—by 37 times, and of oil products—by 100 to 300 times.

Tribunko: One gets the impression that there are no sewage treatment plants in the rayon.

Sakharlykh: Such plants exist, but their number is insufficient. For example, out of 11 treatment plants not a single one functions in accordance with its planned operating schedule. Only four plants provide the mechanical treatment of sewage, while the remaining seven provide no treatment at all. The situation is aggravated by all kinds of accidents at city enterprises.

Tribunko: Could you cite any examples?

Sakharlykh: I will only cite the most serious ones. In 1993, the engine house discharged more than a tonne of oil products into the Angrapa river, causing damage estimated at more than a R1 million. There were similar accidents accompanied by discharging industrial oil at joint-stock enterprises "Molochnyy Zavod," "Chernyakhovskmebel," and "Tekhmash." On 12 January, an industrial oil spill occurred at "Tekhmash" through negligence. [passage omitted]

Tribunko: I would like to know your opinion regarding the building of the facility for processing toxic waste.

Sakharlykh: This is not a bad idea. If everything goes according to plan, and all the technological requirements are observed, the functioning of the facility will not aggravate the ecological situation in the region. However, we cannot disregard the notorious "what if" factor which can bring about big trouble, including deaths.

Besides, I do not understand the haste with which this idea is being implemented. Geologic research has not been completed, there has been no independent experts' evaluation of the project, nor its technical and economic justification. Thus, I believe that it is too early to speak about the facility at this point.

Japan 'Whipping up Tensions' Over Waste Dumping Problems

LD2801091694 Moscow ITAR-TASS in English
0745 GMT 28 Jan 94

[By ITAR-TASS correspondent Yuriy Grachev]

[Text] Vladivostok January 28 TASS—A top official of the Russian Pacific Navy accused Japanese mass media of "whipping up tensions" over the waste dumping problem.

"Our neighbours in the Sea of Japan, as well as other countries which have nuclear power-engineering, also dump low-radioactive waste in coastal waters. This is world practice and nobody, but Japan, makes so much ado about it," Valeriy Danilyan, head of the chemical service of the Pacific Fleet, told TASS on Friday.

This "ado" forced a tanker from the Pacific Fleet with nuclear waste on board to dock in the Bolshoy Kamen Bay where it will have to stay until spring.

In order to help the Pacific Fleet to cope with the situation, Japan offered its own tanker to be used for storing radioactive waste.

It is hard to say whether this was just a hasty decision or an underestimation of the experience of Russian navy-men, according to Danilyan.

The Japanese tanker was worn out by 30 percent, it had no necessary double coating and no pumping system to load and unload the waste, he explained.

Besides, it could not solidify liquid waste and the Pacific Fleet had to turn down the Japanese offer.

Russian Navy Commander-in-Chief Feliks Gromov told reporters during a recent visit to Vladivostok that 20 hours after dumping the level of radioactivity does not exceed the natural background in the Sea of Japan. He added that Russia is now designing an ecologically-safe technology to utilise radioactive waste.

BELARUS

Official Analyzes Ecological Situation

WS1901170094 Minsk CHYRVONAYA ZMENA
in *Belarusian* 13 Jan 94 p 3

[Interview with Alyaksandr Alfonsavich Matsyasovich, head of the Information and Public Relations Department within the State Committee for Ecological Issues, by Alyaksandr Hyerasimaw; place and date not given: "Nature Cannot Wait"—first paragraph is CHYRVONAYA ZMENA introduction]

[Text] Within our everyday problems and sore issues, we do not notice the situation in which our environment has found itself lately. Sometimes, nature surrounding us can cause us—tired and nervous with everyday complexities—to become wild, and then we claim that protection of nature is not our affair. Our correspondent queried Alyaksandr Matsyasovich, head of the Information and Public Relations Department within the State Committee for Ecological Issues, on the pressing ecology issues in Belarus.

Matsyasovich: At the start, I would like to note that our Republic is characterized by an irrational use of natural resources. Before, we connected this fact with domineering economic relations: Energy and natural resources had to be used most effectively and no one was interested in the effectiveness of production [as published]. Low quality production brought about a lot of waste which was not processed. For example, yearly, around 4.5 tons of domestic and industrial waste (per capita!) is being produced in Belarus. Only two enterprises in Belarus—in Minsk and Mogilev—are dealing with the partial processing of waste. A powerful Minsk factory is processing barely 30 percent of this waste. The unprocessed waste is being dumped. Officially, our dumps occupy an area of more than 10,000 hectares. However, no one has ever calculated the area occupied by unofficial dumps....

A second problem is the large-scale intrusion into nature. Many types of plants, animals, and insects have disappeared.

We are currently living in a situation where former wet regions of Polesye are suffering from lack of water, especially, in Gomel Oblast.

Hyerasimaw: Alyaksandr Alfonsavich, could you please remind us what natural resources we are rich in and how we are using them?

Matsyasovich: First, our water resources. Almost all our cities have more or less effective purifying stations. However, purifying stations in some of our regions are overloaded and overutilized. Minsk purifying stations are in the latter category.

We cannot drink water from our rivers. Due to the improper use of fertilizers and insecticides, the agricultural sector of Belarus presents the greatest danger to our rivers. However, it is because of the improper behavior of people that nature suffers most of all. The main polluter of our rivers is ... oil! If in southern Belarus—where oil lies close to the surface—the outer surface is polluted due to the oil's outlet to the surface, the oil pollution of our remaining areas is caused by the improper use of oil resources.

Our water purity records usually exceed normal levels from one- two to 40 points, like in Soligorsk. Verkhnedvinskiy, Nesvizhskiy Rayons, and some rayons of Brest and Grodno Oblasts suffer from a high level of water pollution as well.

Further, some 3 million tonnes of polluted substances are discharged in the air. This equals the amount of toxic substances polluting the air of Zaporozhie and Krivoy Rog taken together. Maybe this is not much, but Belarus, located in a specific geographical zone, is to a greater extent polluted by transferred air masses from other territories. If we are to believe West European experts, the Belarusian atmosphere is polluted in 18-20 percent by its own sources and in 80-82 percent—by someone else's.

From all the Belarusian cities, Novopolotsk is in an extremely serious ecological situation. However, in 1993, air pollution in Novopolotsk was decreased by 22 percent. This time, it is connected not to the upgrading of the production capacity, but to the fall of the economy.

The Kuybyshev factory in Mogilev is very harmful from an ecological standpoint. To my regret, we cannot do anything to improve the situation because this factory is located in the center of the city. We cannot move people, or this enterprise, or close this dangerous giant producing one of the most poisonous chemical substances. In addition, there is not enough room to build effective purifying stations.

Many years ago, Belarus signed a range of international agreements, one of which stipulates specific amounts of nitrogen oxides discharged into the air. These agreements hamper the development of our power industry. These agreements do not allow operating the new electric power plant No. 5 which was built in Minsk. At the same time, the Republic badly needs electric energy. We cannot afford to buy a good purifying installation from Japan or Germany. Power engineering in Belarus is

going to ask the international community for permission to temporarily sidestep the above-mentioned agreements until the Republic stabilizes the work of power engineering. Recently, Portugal has received such permission. By the way, Portugal, Poland, Rumania, and Malta are leading polluters in the world.

Hyerasimaw: Our Republic should have an effective legal footing and appropriate state institutions and organizations to resolve ecology issues. Are we moving forward in this direction?

Matsyasovich: First of all, responsibility for the protection of nature should be carried out by environmental users themselves. We have the "Law on Nature Protection." Therefore, any enterprise, including small ones, should keep to existing norms. It is difficult because they lack proper technologies and purifying equipment. Our State Committee for Ecological Issues controls the implementation of ecological laws. Violation of these laws brings about financial and administrative penalties. We can even close enterprises that violate these laws. Yes, this issue is not properly organized in our Republic. In my opinion, hereditary factors of the old administrative system still affect our actions.

[Matsyasovich continues] Anyway, we could improve the entire ecological situation, especially our specific institutions dealing with Chernobyl issues and following their own programs. We require perspective, and a scientifically grounded ecological policy. We require systematic monitoring, scientific vision, etc. We have a relatively high research potential. Already in the 1970's, Belarusian researchers conducted a scientific prognosis for the next 20 years, and they had prognosticated much of what we are experiencing today. However, nobody wanted to listen to them then. We have interesting research projects. It is essential to find such economic levers that could make our producers use natural resources rationally. It sounds incredible, but our legislation has no notion of the so-called "ecological crime." Following is one of many examples. In Novopolotsk, around 90,000 tonnes of high toxic substances have been spilled into the Dvina river. Later, they reached the Baltic Sea and caused the death of fish. The operator and the security engineer were tried for violation of security rules but not for any serious "ecological crime."

Violators of ecological laws are fined for polluting water or for poaching. So, what about the land and air? Currently, an ecological code of laws including 16 laws is being drafted. We have adopted the "Law on the Protection of the Environment," "On Ecological Examination," "On Ecological Taxation," "On Waste." The laws "On Protected Territories," "On Ecological Education," and "On Regulation of the State Control System" are being drafted.

We should create a single system of state control. Just at the moment, the state control system is split. The State Committee for Protection of the Environment, the State Committee for Land Reform, the Ministry of Forestry

controlling the use and protection of forests, the Chief Department of Belarusian Fish Industry, the Chief Committee for Water, Meteorology [Belhidramet], and various sanitary services do not cooperate. None of these institutions has enough powers.

We should also speak about the examination of projects by state experts, the system for the ecological education of experts, the ecological culture of the population, and the use of international experience.

Hyerasimaw: Yes, there are a lot of problems. However, can we hope that they will be resolved?

Matsyasovich: In my opinion, we will be able to resolve them. In the spring of 1993, the Belarusian Cabinet of Ministers adopted a decree stipulating the upgrading of the monitoring system. This decree will be implemented in 1994-95. The decree on the introduction of regular land surveys has also been adopted. This means that the use of all natural resources will be strictly controlled, and the natural resources will be subject to normative use. If we consider forestry, I can say the following. The corresponding laws that had been adopted are being currently implemented in this sphere. Felling does not exceed the growth of forests. You know, after the 1941-45 war, the greatest part of our forests was destroyed. Only 2.5 percent of the mature forest is left. Currently, a third of Belarus is covered by forests. In other words, the program of use and restoration of forests is being implemented. First of all, we require a protection system for all our natural resources. Of course, if new laws are adopted they will be implemented and we will make progress.

Hyerasimaw: I wish you success. Thank you for the interview.

GEORGIA

Cabinet Creates Single State System To Monitor Environment

AU2001121494 Tbilisi *SAKARTVELOS RESPUBLIKA*
in Georgian 14 Jan 94 p 1

[Unattributed report: "In the Republic of Georgia Cabinet of Ministers. On the Creation of a Single State System To Monitor the Republic of Georgia Environment"]

[Text] By a decree of the Republic of Georgia Cabinet of Ministers, a single state system to monitor the Republic of Georgia environment has been created; it will observe and assess the state of the environment and make forecasts.

The creation of a single state system for ecological monitoring in the Republic of Georgia will make it possible to improve the administration of the ecological situation in Georgia and its operational control. Great importance is attached to its successful implementation

from the point of view of the resolution of other problems connected with the national economy.

The Ministry for the Protection of the Environment has been entrusted with organizing a single state system to monitor the republic's environment and elaborating a program for implementing it in the republic.

The republic's academies of science and agriculture and a number of ministries, departments, and agencies have been entrusted with implementing individual monitoring systems.

The Ministry for the Protection of the Environment along with the Academy of Sciences and interested ministries and departments are to present within two months to the Republic of Georgia Cabinet of Ministers proposals for the creation of an interdepartmental council in the Ministry for the Protection of the Environment that will elaborate a program for creating a single state system to monitor the republic's environment.

On the basis of the radiation control group in the "Sakmtavarhidrometi" republican center for monitoring the environment, the Ministry for the Protection of the Environment should create a service for controlling radiation safety in the republic by the end of January 1994.

A single environmental information and research system is to be created within the main department of hydrometeorology and environmental monitoring, which will unite the departmental banks holding statistics on monitoring on the basis of a single methodology and in accordance with international standards.

LATVIA

Environmentalists Worry About Radioactive Waste
*WS1801163694 Tallinn BNS in English 1050 GMT
18 Jan 94*

[Text] Riga, Jan 18, BNS—Latvia may face problems with radioactive waste because of shortfall of store containers, said Andrejs Salmins, a nuclear safety specialist at the Environmental Protection and Regional Development Ministry.

Financial and managing hardships hamper repairs in Latvia's sole nuclear waste depot in the Radons enterprise while its existing storing capacities are exhausted, Salmins said.

To solve the problem, the ministry will consult the Finance Ministry's experts to calculate the sum needed to finish the reconstruction and find a building organization to complete the works.

The approximate sum is 150,000 lats, but the state budget earmarked only 50,000 lats for the enterprise's reconstruction.

In addition, the Radiation and Nuclear Safety Inspectorate has until Jan. 24 to draft a program for ecological research in Radons and its vicinity.

The Riga Radioisotopic Research Institute also nears the brink of bankruptcy. This institute, like Radons, stores radioactive waste. The institutes' scientists are commissioned to forward proposals on the use and storage of radioactive substances. They should also determine which substances to keep and which to sell.

The National Environmental and Social Health Center will compile a resolution on work with radioactive waste and prepare a program for monitoring the residents' health in Radons' vicinity.

Denmark, Sweden To Help Implement Green Projects

*WS1101112494 Tallinn BNS in English 1805 GMT
10 Jan 94*

[Text] Riga, Jan 10, BNS—The Latvian Environmental Protection and Regional Development Ministry established successful contacts last year with Denmark and Sweden in waste processing and sewage treatment, spokesman Zigfrids Bruvers told BNS.

Denmark sponsored the Riga city waste processing scheme that also provides for sorting of nonindustrial waste. Latvia used Danish funding to assess the quantity of toxic waste in the country, Bruvers said.

Sweden allotted 108 million kronor to build sewage processors in Latvia, Estonia and Lithuania. From this, 5 million kronor were extended to the Riga municipal water supply and sewerage enterprise.

Another part of the Swedish Government assignation, around 40 million kronor, is needed to reconstruct the Liepaja city sewerage. Currently, Liepaja is one of the main polluters of Latvian waters in the Baltic Sea.

Another 9-million-U.S.-dollar project targets introduction of efficient and environmentally friendly heating systems in Latvia's small towns. The plan is based on transforming regional heating systems on local raw materials, like wood or peat.

From the project's expenses, 1 million dollars are donated by the Danish Government, the rest is the Danish Government's loan to Latvia. The term of the credit is 10 years, Denmark wants no interest from the sum. The Latvian Government, however, still has to extend its guarantees to insure the credit.

In addition, the Latvian Valmiera district and the Danish Velje district environmentalists started to jointly monitor the river basins in the Valmiera vicinity, said Bruvers. The Velje authorities also presented Latvia with a sea monitoring ship.

Noxious Waste Inspectorate Wants Toxic Waste Laws Amended

WS2501140494 Tallinn BNS in English 1116 GMT
25 Jan 94

[Text] Riga, Jan 25, BNS—The Latvian Dangerous Waste and Toxic Substances Inspectorate passed the Environmental Protection and Regional Development Ministry a package of amendments to the 1993 law on toxic waste, Chief Inspector Andris Roska told BNS.

Enterprises that work with dangerous waste should register themselves at local governments to get licenses for its use and transportation, under the amendments.

The inspectorate established businesslike cooperation with the Customs Department, which is provided with the list of dangerous substances, Roska said. Customs officers also inform regional inspectors on any suspicious cargos, he said.

Customs officers together with the regional inspector, for example, recently detained 15 railway containers with phenolic waste, which the Belarus-based Ruta firm was sending to its Latvian partner Service SPB.

Roska said that Service SPB must have planned to sell the waste as cheap heating fuel. When burnt, phenolic waste produces toxic foul-smelling fumes that are harmful to nature and people's health.

The Basel convention also forbids interstate transportation of phenolic waste, Roska said. The cargo was returned to Belarus 6 January.

MOLDOVA

Government Spokesman on Efforts in International Environmental Cooperation

94WN0128A Chisinau NEZAVISIMAYA MOLDOVA
in Russian 4 Dec 93 p 3

[Article by Valeriy Bricag, chief specialist of the State Department for Environmental Protection and Natural Resources: "The Ecology. Who Is Supporting Us in International Cooperation for Protection of Nature"]

[Text] One of the priority areas of the foreign policy of the Republic of Moldova is international cooperation in the area of environmental protection. Moldova is joining in the activity of international environmental protection organizations and is participating in the implementation of the corresponding conventions and agreements. To do this, an Administration of International and Social Relations has been created under the State Department for Environmental Protection and Natural Resources, and under the National Institute of Ecology—a Bureau of International Programs and Projects. The solutions to problems of international cooperation of the Republic of

Moldova in the area of environmental protection is discussed by a chief specialist of the State Department for Environmental Protection and Natural Resources, Valeriy Bricag.

The concrete results of the state department's international activity were the ratification by the parliament of the Republic of Moldova of the Biodiversity Convention and the endorsement of such important documents as the World Charter on Nature, the Convention on Cross-border Impact of Industrial Accidents, and the Convention on Protecting the Animal Kingdom and the Natural Environment in Europe. Moreover, in July 1993 the parliament adopted a decree on the creation of a National Autonomous Center of the Republic of Moldova in the International System of Information on the Environment (INFOTERRA), which gave us access to the World Environmental Data Bank.

It should be noted that in international cooperation in the area of environmental protection, preference should be given to concluding bilateral and regional agreements at the state level. The endorsement of international conventions should take into account, on the one hand, the republic's financial and technical capabilities and, on the other, the interests of the state and the world community. Both state and nonstate organizations can enter international environmental protection organizations. Cooperation with international funds, organizations, scientific centers, and financial structures should include primarily the development and implementation of national ecological projects.

As early as 1990, the State Department for Environmental Protection and Natural Resources came out with an initiative to conclude agreements at the level of environmental protection organs of the Union republics. This activity has been continued—draft agreements have been sent to all the independent states of the former USSR. But not all of them have shown a readiness to cooperate at this level. Only the first protocol has been signed between the State Department for Environmental Protection and Natural Resources of the Republic of Moldova and the Ministry of Environmental Protection of Ukraine.

The Interstate Ecological Council (MES), which anticipates cooperation among the CIS countries, was formed in February 1992. But the Republic of Moldova did not sign the document to enter the MES. Moldova has not been represented at a single session of the MES. But a department worker participated in the work of the group of experts for preparing for the first session of the MES, and another one participated as an observer in the work of the first meeting of the Coordination Group under the MES for cooperation with UNEP [United Nations Environment Program] and other international organizations. This group was formed by a decision of the third MES session, which took place in Tashkent in May 1993, and its goal is to coordinate the activity of the MES member countries for creating specialized organs for cooperation with the UNEP and other international

organizations, and also for developing and implementing joint ecological projects under the aegis of the UNEP.

In the former USSR, the role of a specialized organ for cooperation with international environmental protection organizations, including UNEP and the World Bank, was assigned to the Center for International Projects (TsMP) under the Union State Committee for the Protection of Nature. The CIS countries decided to take advantage of the experience of the TsMP and, on its basis, to create a consultative-executive organ of the coordinating group under the MES.

Thus, the CIS countries developed their own mechanism for interstate and international cooperation, but it is too early to judge its effectiveness. In October of this year, an official appeal was addressed to the chairman of the parliament of the Republic of Moldova from the secretariat of the MES, considering the entry of the Republic of Moldova into this organization. I think we should get rid of our excessive suspicion regarding all structures created within the framework of the former USSR.

Representatives of Russia are working in many international organizations. The Russian lobby is very influential there. This could have decisive significance for us—the success of our cause will depend on the position of one or another representative of an international organization. Joint entry and coordination of activity will help incline international organizations to support our country. The TsMP is making a commitment to render assistance in international support for Moldovan ecological projects and is also prepared to help in the organization of a similar center in our republic.

We are losing a great deal as a result of delay in solving these problems, and we are being left out of the picture. Thus, the British company Alexander Jib and Company has monopolized the right to develop and implement the project for protecting the basin of the River Prut, which will enable it to dispose of funds allotted by the World Bank.

Our relations with Romania are being arranged on the basis of the Protocol on Cooperation between the State Department for Environmental Protection of the Republic of Moldova and the Ministry of the Environment of Romania. In keeping with this, a Romanian-Moldovan commission was formed for working together in the Prut basin. But there has been no marked success in this area. Cooperation is limited mainly to unilateral aid from Romania. Financial and technical aid has been rendered to the Moldosilva Association and the National Institute of Ecology—for forestry and radiological research on the territory of Moldova.

Following the lines of cooperation within the framework of international conventions, we will have to solve difficult financial problems. Thus, Moldova has not joined the Geneva Conference on Crossborder Air Pollution over Large Areas. The reason is the lack of hard currency to subsidize measures within the framework of

the Convention. As for the Vienna Convention on Protection of the Ozone Layer, not joining it has entailed serious consequences for our economy. Starting in 1994, international sanctions and bans will be introduced on exports and imports of freon-emitting items. The corresponding sanctions will be applied to countries that have not joined the Washington Convention on International Trade in Species of Wild Flora and Fauna That Are Threatened With Extinction.

In this connection, it must be noted that countries of the former USSR have the opportunity to join these conventions by a simple confirmation, announcing this to the corresponding depository with an official government note. The same thing pertains to international organizations of the UN system. And if we are still not cooperating with such well-known organizations as the UN Environment Program (UNEP), the United Nations Industrial Development Organization (UNIDO), the UN Center for Human Population (HABITAT), the World Meteorological Organization (WMO), and others, this is because of our inefficiency and sometimes simply because of our ignorance of the procedures for addressing, joining, and entering them.

A center for international programs and projects would help to eliminate this information gap and establish permanent contacts with dozens of international funds, organizations, and centers that would be extremely useful to our country. For example, the Regional Center for Environmental Protection in Central and Eastern Europe (REK) in 1994 allotted \$600,000 in financial aid to nongovernmental organizations engaged in the development and implementation of environmental protection projects. And through the DZhYeF [expansion not given] Fund of the World Bank, \$208 million is being allotted just for projects within the framework of the Convention on Biodiversity. In order to participate in these projects, we must either make a request for financing our projects or submit an application to enter the REK, MSOP, and so on. But here, as they say, we have fallen slightly behind.

For the sake of clarity, I will give some other facts. Just during the past two years, Ukraine has been able to organize the participation of its specialists in seminars financed by the governments of the United States and Poland, and the World Bank, for training specialists in the area of ecological projects and programs. The United States, additionally, finances the Center for Ecological Education and Information formed in Kiev. Canada has allotted to the Ukraine \$3 million for a program for saving the Dnieper River. The Know-How Fund from England renders the Department for the Introduction of International Projects consulting aid in the implementation of 13 projects for ecological restoration of Ukraine. The World Bank has already allotted to the country about \$1 million for carrying out projects in the Carpathian preserves and the Danube Delta, and the European Community is financing the development and introduction of a system of monitoring, legislative acts, and standards.

Summing up what has been said, I must note that the State Department for Environmental Protection and Natural Resources of the Republic of Moldova has adopted a number of measures to work in the main areas in which our country should cooperate in the area of environmental protection. Specialists of the state department are participating in the implementation of a program for protecting the Danube River and a program for ecological restoration of the Black Sea basin. Materials are being prepared for entry into the International Union for Protection of Nature and Natural Resources and the Regional Center for Environmental Protection in Central and Eastern Europe. Negotiations are being conducted with representatives of international organizations to hold the international fair Eco-94 at the beginning of next year, and with representatives of the international convention for one called the "Role of Information in Overcoming the Ecological Crisis in Countries of the Former Socialist Camp During the Period of Transition to a Market Economy." Lists of international conventions and agreements that are of primary significance to Moldova are being systematized and prepared to be submitted to parliament.

UKRAINE

Demyanov Blamed for Allowing Use of U.S. Chemical 'Harness'

*LD2101210594 Moscow INTERFAX in English
1956 GMT 21 Jan 94*

[Text] The Ukrainian Prosecutor General's Office blames Vice Prime Minister Vladimir Demyanov for deliberate inflicting ecological damage to the republic, Deputy Prosecutor General Olga Kolinko told a press conference in Kiev today. She described Demyanov's actions as "illegal and destructive," referring to his giving Agriculture and Food Minister Yuriy Karasik his personal consent to using the American chemical "Harness" in the republican agriculture.

She said "such a connivance allowed the American company 'Monsanto' to fetch in 2,000 tons of this chemical which is not even registered in the U.S.A. and is banned for use in Ukraine." She also said a criminal case was filed against "state officials of the Agriculture and Health Care ministries" on the fact of the acquisition of this chemical and production of banned chemicals in Ukraine.

In an interview with Interfax-Ukraine, Kolinko said "Ukraine has become a test site for foreign companies where they test their chemicals, and moreover, directly on the fields."

"Monsanto" representative in Kiev, Vladimir Kudryashov, told Interfax-Ukraine that "they did sell some quantity of 'Harness' to Ukrainian consumers." He said "had the chemical not been used last year, Ukraine would not have had such a rich harvest of corn." At the same time, he added that the company's office in Kiev

will sell the chemical only after its registration in the republic, supposedly this February or March.

Nuclear Experts on START-I Scientific, Ecological Aspects

WS1901154494

[Editorial Report] Kiev UT-1 Television Network in Ukrainian at 1955 GMT on 18 January carries the program "Nonnuclear Ukraine" providing scientific and ecological justification for the signing of the tripartite U.S.-Russian-Ukrainian agreement by President Kravchuk. The program is attended by Ukrainian Academy of Sciences chairman Borys Paton, unidentified deputy chairman of the same academy, Viktor Zelenskyy, manager of the Academy of Sciences Institute of Physics, Nur Nigmatullin, first deputy chairman of the Nuclear Committee, Mykola Steinberg, chairman of the State Committee for Nuclear and Radiation Security, and Leonid Kapkan, head of the department at the Institute of Physical-Organic Chemistry.

Borys Paton opens the program saying that the signing of the treaty in Moscow by President Leonid Kravchuk is "an event with a historic meaning long-awaited by mankind." He points out that the legislature should promptly ratify the agreement, because otherwise, Ukraine will face "political and economic hardships." Paton underlines that the issue of security guarantees for Ukraine has been finally resolved, following a long period of "evading" this problem by both the United States and Russia. Paton believes that readiness to grant Ukraine security guarantees facilitated the signing of the agreement. He emphasizes that Ukraine has been a merely nominal owner of, and has not exercised control over, the nuclear missiles deployed on its territory due to lack of necessary facilities and qualified personnel. In Paton's opinion, Ukraine has scientists, engineers, and military experts capable of dismantling the missiles in Ukraine. However, he points out that this would take a very long time and entail huge financial resources. Thus, the agreement, providing for involvement of international funds for the elimination of Ukrainian nuclear arms, will enable the elimination of the latter "with an advantage for Ukraine." Paton concludes by saying that the Academy of Sciences staff positively assesses the signing of the agreement by the Ukrainian president and believes that the Supreme Council will ratify it.

Viktor Zelenskyy enumerates the facilities and equipment necessary for launching nuclear missiles which are not available in Ukraine. These include tracking stations and tracking satellites. Neither does Ukraine have the software and computers capable of correcting missiles' flight paths. Thus, "Ukraine has had a gun but has not known how to pull the trigger or where the bullet will fly."

Adding to the discussion, Nur Nigmatullin says that it is "practically impossible" for Ukraine to create its own

infrastructure for maintaining and servicing the missiles, and signing the agreement on eliminating the latter was the only sound resolution.

Speaking of Ukraine's chances to build its own nuclear arms, an unidentified speaker points out that Ukraine is a state with highly developed industries. However, to produce nuclear arms it would have to train qualified personnel, conduct scientific research in the field of splitting the isotopes of uranium-235, and build reactors for producing plutonium and tritium. Ukraine's scientific potential permits this. A nuclear warhead is a very hi-tech product, and Ukraine having no experience in this field, would have to establish a design bureau and a research institute in the Republic and furnish them with equipment. Finally, the process would involve creating entire new industries. However, Ukraine's lack of test-ranges would still be the main factor precluding the building of nuclear weapons in Ukraine.

Commenting on ecological aspects of nuclear arms stationing in Ukraine, Viktor Zelenskyy points out that the liquid propellant in Ukrainian nuclear missiles is "enough to cover half of Ukraine with a 500-meter layer of a highly poisonous substance." Half of the Ukrainian population would die "provided there is no wind or rain." Zelenskyy believes that President Kravchuk undoubtedly took the ecological aspect into account when signing the Moscow agreement.

Adding to the discussion, Leonid Kapkan says that the maximum admissible concentration of the liquid propellant "heptyl" in the atmosphere is 1/10,000 grams per cubic meter, while "hundreds of tonnes" of the substance are stored in Ukraine. He points out that the Institute of Physical-Organic Chemistry, aware of the fact that Ukraine is a "powerful" spacecraft producer has developed a technology permitting the processing of heptyl into a harmless salt and, if needed, back into heptyl with losses not exceeding 15 percent of the substance. According to Leonid Kapkan, the technology developed by the Donbass Institute of Agroindustrial Technologies brought about a 50 percent increase in crops of wheat and barley in test-fields.

Answering the moderator's question on what will happen if the legislature refuses to ratify the Moscow agreement, Mykola Steinberg, chairman of the State Committee for Nuclear and Radiation Security, says that maintaining and servicing nuclear arms is as complicated as producing them. The processes under way regarding warheads will make them worthless in the future. On the other hand, the expiration of the missiles' warranty time period will make them dangerous and extremely expensive to dismantle.

According to Nur Nigmatullin, nuclear devices of Ukrainian-based warheads will be processed into fuel sufficient for six to seven years of the 10 Ukrainian reactors' operation. Nigmatullin points out that Ukraine will not receive this kind of fuel free; the costs will be some 30 percent lower than the current ones. Given the dramatic

situation in supplies of power resources, including nuclear fuel, Ukraine will be able to save "the badly needed billions of rubles." As a "future user" of this fuel, Nigmatullin appeals to the legislature to ratify the agreement, and assist nuclear power engineering in Ukraine that covers 35 percent of the demand for electric power in the Republic.

Rivne Scientists Develop Soil Decontamination Procedure

AU2001143694 Kiev HOLOS UKRAYINY in Ukrainian 19 Jan 94 p 4

[Oleksandr Melnychuk report from Rivne: "A New Decontamination Method"]

[Text] This method was developed by scientists in Rivne. According to Vasyl Hurin, doctor of technological sciences and professor at the Ukrainian Water Management Engineers Institute, he, jointly with his colleagues, succeeded in developing a project that will make it possible to "bind" radionuclides present in the soil by natural sorbents (available in Rivne Oblast). As a result, the harmful elements will not be absorbed by plants and will not be consumed, with food, by the people.

The Rivne scientists are assisted by the Chernobyl Ministry and by corresponding oblast structures. Foreign specialists have also shown interest. Eric Nattall, doctor of technical and nuclear technologies [qualifications as translated] and New Mexico University professor, arrived in Rivne. The American expert praised the Rivne project and promised cooperation. Local enterprises stated that if the question of implementing the project arises, they would be willing to invest in this important undertaking.

Chemical 'Bermuda Triangle' Spells Disaster

AU1601153594 Kiev HOLOS UKRAYINY in Ukrainian 12 Jan 94 p 3

[Anatoliy Kobelnyuk report from Luhansk Oblast and interview with Anatoliy Savchenko, chief of the water resources department at the oblast state administration office for environmental protection, and with Lyudmyla Senchynok, associate at the "Luhanskheolohiya" Geological Enterprise department for accounting and utilizing subsurface water reserves and studying their state: "A Place in a Barrel With Brine"—first paragraph published in boldface]

[Text] An ecological hangover—this is a relatively recent notion. Lysychansk, Siverskodonetsk, and Rubizhne, which constitute the notorious chemical "Bermuda Triangle," also suffer the "morning after the night before" syndrome. However, it is precisely here that there is particularly large amount of brine [culinary brine is believed to bring relief after heavy drinking]. But this brine is also a consequence of the same ecological disaster.

Possibly everyone in Ukraine has heard about Lysychansk, Siverskodonetsk, or Rubizhne. No wonder, because these are towns of great chemistry. What harm has that chemistry done there? It turns out that not only has it poisoned the air, rivers, and soil, but even permeated the ground down to hundreds of meters or even kilometers! The consequences may be extremely serious, to the extent that these places may become totally deserted. The triangle expands not only horizontally, but vertically downward—this is its horrifying characteristic.

During the times of Brezhnev, various commissions came to Lysychansk, among them a USSR governmental commission headed by [prime minister] A. Kosygin's deputy. Especially to find out about the specific qualities of the brine produced in large quantities by the local soda plant. Of course, the commissions did not do anything specific, but they came. Now they have stopped coming. Maybe they know there is not enough money to implement potential projects?

Thus, since prerevolutionary times, production waste—calcium chloride solutions—has been discharged by the Lysychansk Soda Plant.

Savchenko: These solutions don't appear to be so terrible. In their composition, they resemble seawater. However, there are huge amounts of them. They are stored in pits, the walls of which are not impermeable. They percolate into the soil and spread through aquifers. Besides that, overfilled reservoirs may break unreliable dams and there could be a catastrophe.

Kobelnyuk: Is it possible to neutralize such production waste?

Savchenko: Nobody in Europe knows how to do this. Such enterprises are located in coastal areas. The waste, as it is, is discharged into the water.

Kobelnyuk: Is it at least possible to somehow use the chlorides?

Savchenko: Prior to the disintegration of the USSR, the soda producers received some assistance from the Northern Fleet. The chlorides were used to prevent the icing over of ships. As a result, reservoirs were gradually emptied. Today, Russians in the north can do without Lysychansk.

Kobelnyuk: What is being done now?

Savchenko: Research work is under way. There are specific proposals, in particular from the Kharkiv Scientific Research Institute "Karbonat." However, in addition to good ideas, there must also be good money.

Lyudmyla Senchynok, associate at the state geological enterprise "Luhanskheolohiya" department in charge of accounting and utilizing subsurface water reserves and of studying their status, does not see any reassuring prospects either.

Senchynok: The reservoirs are overfilled, that is why the plant's operations are on the verge of being halted. Besides, the first reservoir was built back in 1898. The plant owner poured the brine into what was then a huge pit. The second storage pit was dug during the first five-year plan period. The two have already been buried under soil. Currently, there are dachas there. The third storage pit was built in 1969. Although it is better than its predecessors, it is far from being brine-proof. When, in 1976, the fourth storage pit was built, our requirements for adhering to norms were taken into account, but.... The dams of the existing storage pits could collapse any minute, because they were built with God knows what. Besides, karst structures have been revealed in those places. The solution reaches marl soils, a reaction takes place, and carbon dioxide forms as a result. This creates an additional hazard.

The storage pits are overfilled, there are no new ones, and new construction areas are not being prepared.

Kobelnyuk: Besides, there is a time bomb beneath those dachas?

Senchynok: Yes, even though there have been no explosions yet. Subsurface waters constantly wash sites of waste accumulation. We suggested that the waste be processed and dumped on the right bank of the Siverskyi Donets River, where aquifers are weak. However, even in the past there was no money for this, not to mention the situation now.

Kobelnyuk: What can be done with the brine?

Senchynok: The solid substance within its composition could be used for manufacturing medicines. There are some not very pleasant tasting calcium chloride tablets. This substance could also be used as a filler in the production of cement. However, it must be solid. It is too expensive to form briquets and that is not acceptable anyway. There was also a plan to carry the brine to Sivash Lake. However, it was realized that the pipes would soon turn into salt planks.

Kobelnyuk: Therefore, we can only wait and see what happens?

Senchynok: As a matter of fact, yes. The brine spill around the storage pits of the plant has spread to 30 square meters over the drinking water horizon. We monitor the water composition with the help of boreholes. There were times when the spill grew very quickly, but now the situation is changing gradually....

People within the "triangle" are already used to the "reactive"—saturated with various reagents—air and look almost without care at the small clouds that are all the colors of the rainbow. People get used to anything. When the brine gets out of control, drinking water will disappear over scores of square kilometers. It will be impossible to get used to that: People will either have to turn into fish or pack their belongings.

Minister Cites Lack of Progress on Environment

94WN0134 Kiev UKRAYINSKA HAZETA
in Ukrainian No 1, 6-19 Jan 94 p 4

[Article by Yuriy Kostenko, Minister of Environmental Protection of Ukraine: "More Precisely Speaking, the Extinction of the Population Is Occurring"]

[Text] *Who are we? What guides us?*

1. How do you see Ukraine from the heights of your position at the start of the new year of 1994?

2. Very little time is left for you to work as part of the current government before the new elections in 1994. What concrete steps do you intend to take so as to halt the further fall of Ukraine into the abyss of economic crisis?

1. Ukraine is experiencing extraordinarily difficult times. A precipitous destruction and pollution of the natural environment is occurring simultaneously with the economic disarray. The threat to the health of people and the genetic stock of the nation has become real. The quantity of birth defects among infants is increasing every year, and a natural decline in the population—or, more precisely speaking, its extinction—has been occurring since 1991.

The crisis state of the environment in Ukraine is conditioned mainly by the ecologically unsafe functioning of the senseless economic system that we inherited from the times of totalitarianism. Twice as much iron ore was extracted in Ukraine as in the United States at the end of the 1980s, as well as somewhat less coal than in Great Britain, France and the FRG taken together; as much steel as the FRG and France taken together was smelted every year. We have all always taken pride in that, and few gave any thought to the harm being done to nature.

But here are even "better" data. The imperfect technologies for the production and processing of raw minerals that are used in Ukraine lead to losses of up to 70 percent for oil, 50 percent for salts, 40 percent for coal, and 2—5—with some even 10—13 times—more than is required by contemporary technologies for metals. Close to 1.5 billion tonnes a year of natural substances are involved in the process of social production across Ukraine as a whole. More than half are then returned to the natural environment in the form of wastes that poison the surroundings.

But even that is not all.

We are continuing to augment power capacity, in particular nuclear, forgetting both the lessons of Chernobyl and the fact that the share of this sector is reaching 30 percent of the total emissions of harmful substances today. At the very same time, the overconsumption of energy at the enterprises of ferrous metallurgy alone in Ukraine, owing to their technical backwardness, is equivalent to the quantity of electric power generated by all the AESs [nuclear electric-power plants] of the former

USSR. The energy-intensiveness of our output as a whole is six to eight times greater than the analogous measures for the leading Western countries.

The list of this economic self-cannibalism could be continued a great deal longer. Notwithstanding this state of affairs, understanding of the fact that the non-ecological development of the national economy, with sweeping and profound negative effects on the environment, could surpass the consequences of any aggression is still lacking in our society. Backward ecological thinking is unfortunately being demonstrated at all levels of the power structures.

A review that was conducted recently has shown that the specially created extra-budgetary environmental-protection funds of the Soviets of People's Deputies, which are responsible under prevailing legislation for the state of the environment within the bounds of their territories, are not being used primarily for their intended purposes. A whole series of cities in the Donetsk-Dnieper region, where only 20—30 percent of the fund is being used for environmental-protection measures, could be a negative example of this. The rest goes for "patching holes" in the local budgets. All of this is occurring in a region where the extent of contamination of the environment is the greatest in Ukraine.

Our republic budget, however, is the most instructive example of the lack of a statewide approach to the resolution of ecological problems. Just 0.2 percent of the gross national product (GNP) was envisaged for all environmental-protection measures in 1993. And that is in the face of the fact that economic losses are reaching far beyond 10 percent of the GNP as a consequence of the worsening state of the natural environment. By way of comparison, most of the ecologically clean countries of the West spend 2—4 percent of their GNPs on measures to protect the environment. The Minprirody [Ministry of Environmental Protection] monitors just 10 percent of that symbolic amount, with the rest of the budget appropriations, without regard for ecological priorities, being monitored under the old sector principle by Minekonomiki [Ministry of Economics] and Minfin [Ministry of Finance].

The state of affairs is no better in the system to monitor the upholding of environment-protection legislation. The Minprirody of Ukraine only recently obtained the right to subject violators to administrative liability. As for ecological crimes—which are being committed everywhere—some bodies of the procuracy have taken a crazy stance. Instead of fighting against these crimes, they have made the object of their vigilant attention... Minprirody itself. It is, of course, far easier to "point out shortcomings" than it is to bring people to criminal liability, as recently happened, for example, with the bringing of toxic substances into the city of Rivne. But perhaps now is not the time to just "point out," we need, as we are fond of saying, to "pull the plow" together so as to survive.

The terrible ecological situation in which Ukraine finds itself today has thus been conditioned by the inability of the post-communist system to act effectively. So we will never ourselves get out of this abyss without radical economic and ecological reform.

2. The principal efforts over the time that remains will be directed toward completing the work on ecological reform that we started last year. That is, the creation of the legal, organizational and financial conditions for the pursuit of an effective ecological policy in Ukraine. The essence of the problems lies in the necessity of resolving them as soon as possible, in the creation of mechanisms that would stimulate the ecologization of production and energy conservation. We are planning, for that purpose, to institute fees for the utilization of natural resources, introduce tax concessions for resource-conserving and ecologically clean technologies, and employ economic sanctions for the utilization of natural resources above and beyond standards for or their contamination.

All of these measures, which have to be the basic guidelines for a new state policy in the realm of protecting the environment and utilizing natural resources, will lead to the fact that it will become unprofitable for an enterprise to pollute the environment and consume resources excessively. More than twenty legal-standards documents have already been adopted in order to realize the socio-economic reform.

Also to be completed, aside from that, in the first half of 1994 are:

- the development of a National Program for the protection of the natural environment;
- the development of a mechanism to compensate for ecological losses as a consequence of the functioning of trunk oil and gas pipelines, electrical-transmission lines and the transport of freights across the territory of Ukraine;
- the institution of a system of ecological certification and licensing;
- the development of regional ecological programs for the Dnieper, Donbass and Polissya, along with other documents.

The completion of that work would make it possible to launch the realization of a policy resulting in the gradual reproduction of a clean natural environment, a halt to the extinction of the Ukrainian people and economic prosperity as early as 1994.

But that is a task for the next government.

Pollution Caused by Black Sea Fleet Detailed

94WN0132A Kiev MOLOD UKRAYINY in Ukrainian
4 Jan 94 p 3

[Article by Volodymyr Boreyko: "Top Secret: Black Coats against the Black Sea"]

[Text] In the 1950's, the battleship Novorossiysk sank in a Crimea harbor; 2,000 sailors went down. The year 1974 marked the end of a cruiser of the Krest class which burned down in the North Sea; 450 sailors were lost. In April 1987 a small rocket-armed boat blew up; 39 sailors died. Tragedies on Soviet Navy ships were a common occurrence. In the old days, the truth was simply covered up. The large destroyer Otavzhnyy sank on 30 August 1974 in the Black Sea, near Sevastopol. Ammunition stores blew up and fire kept rescue ships from coming close. According to some information, hundreds of sailors perished.

Some time in the 1970's, a Soviet diesel boat also went down. The helicopter carrier Moskva caught fire several times. First time in 1971-72, then in 1989. In 1969, it hit itself with its own torpedo; thank God, it failed to explode. In the winter of 1991, the engine on board the large destroyer Admiral Zakharov blew up near Vladivostok. The fire burned for 31 hours. Overall, from 1945 to 1989, some 200 serious accidents took place in the Soviet Navy.

While the destruction of navy boats was often the result of general negligence, unreliability of Soviet military technology and simple accidents, the dumping of ammunition into the sea occurred deliberately and maliciously—against the people and against nature.

Until 1989, the USSR Ministry of Defense had a secret order which permitted the dumping of ammunition into the sea. From February to May 1956, chemical weapons were transported from Obozerskaya Station in Arkhangelsk Oblast to Severodvinsk. They were unloaded and dumped in the White Sea. A year later, similar weapons were dumped around Spitsbergen. In 1960-61, from Saratov Oblast to Pechenega came trainloads of bombs weighing 100 kilograms, 250 kilograms and 500 kilograms, of the 1939 vintage. The bombs contained mustard gas, lysite and zarine. Later, using Murmansk merchant marine vessels leased by the USSR Ministry of Defense, those chemical weapons were sunk in the vicinity of Novaya Semlya. Altogether, 183 trainloads of chemical weapons were shipped out of Pechenega.

During the past 40 years, metal casings have rusted through. Chemical weapons, like the genie from the fairy tale, got out of the bottle. The star fish were first to feel it. At the Cape of Dvina alone, 6 million of them were washed up. Then came the turn of the humans. According to data provided by Correspondent Member of the Russian Academy of Sciences A.Yablokov, advisor to President B.Yeltsin on environmental issues, mortality around Arkhangelsk has risen since 1991 by 10 percent.

At the bottom of the Baltic Sea lie between 100,000 tons and 300,000 tons of poisonous compounds, mainly zarine and mustard gas. The Navy began sinking containers and weapons in the late 1940's, and continued until 1965. It was done mainly in the vicinity of the Kristianse island and 56 miles south-west of the town of

Liepaja, at the depth of just a few dozen meters, in the area of 780 square kilometers.

One shot of mustard gas diluted in 50 cubic meters of salt water is capable of killing a horse. Specialists predict that if, God forbid, the gas seeps out of the rusted casings and shells, the total amount would be sufficient to kill the Baltic Sea four times over. Danger threatens the 30 million people who live along the shores of the Baltic. The deadline for the weapons is drawing near: only 10 years remain. The number of victims is already growing. Some 100 Danish fishermen became disabled after catching old chemical shells in their nets. The same happened to fishermen from Klaipeda. Who will be the next victim? The sea often washes pieces of yellow phosphorus onto the shore. God forbid you pick one up, mistaking it for amber.

Soviet strategists did not neglect other seas, either, namely the Barents and Karsk seas. Orders were issued to dump there nuclear waste from nuclear-powered submarines. Containers with liquid and solid nuclear wastes were transported on the same Murmansk Merchant Marine vessels and dumped into the sea; as they did not sink, they were blasted with assault rifles. Somewhere here is the final resting place of the expired engine from the nuclear-powered ice breaker Lenin.

According to Greenpeace, in the vicinity of Novaya Zemlya lie tens of thousands of containers with radioactive materials; the Soviet Northern Fleet annually dumped into the sea 10,000 cubic meters of liquid and 200,000 cubic meters of solid wastes in different stages of nuclear decay. In the Karsk Sea, 13 to 20 Soviet nuclear reactors have been dumped, some still containing nuclear fuel. Total radioactive pollution of the northern seas by the Soviet Union reaches 2.2-3.2 million curie, which is between 2 and 4 times higher than the level of harm caused to the Atlantic by Western countries.

In May 1941, Soviet sailors dumped mustard gas, which was no longer needed at military bases, into the Sea of Japan, not far from Vladivostok, at the depth of only 1 kilometer.

On 9 October 1990 the Tsezar Kunikov was loaded at the port of the Kamish-Burunskiy iron ore complex in Kerch with unused ammunition. On orders from the technical administration of the Black Sea Fleet, it was transported to the ship from one of the military warehouses in Kerch. The environmental protection agency wanted to intervene, but it was rebuffed. The cargo was dumped in the Black Sea at the depth of 2 kilometers; according to some data, it has been done more than once.

What has been done cannot be undone, says ancient philosopher Theognides. But what could be done is find out what had been dumped, punish the guilty, forbid such actions in the future and raise the weapons from the bottom of the sea and discharge them. But the leadership of the former UkSSR State Committee on the Environment (V.Filonenko, chairman; I.Lyakh, first deputy; and

V.Cherednychenko, head of the water resources protection department) took no steps in that direction. Only an investigative commission was set up, without informing either the government or the press. A report was sent to Moscow, to the USSR State Committee on the Environment, to Deputy Director V.Kostrin, numbered 11-S and dated 26 February 1991. But there, another reorganization was underway at the time and no answer came to Kiev. (Former Admiral Kasatonov, commander of the Black Sea Fleet, later officially admitted that weapons of a certain type were dumped into the Black Sea, quadrant 72-73, without the sanction of environmental protection authorities.)

Highly placed protectors of the environment in Ukraine calmed down. They kept their well-paid positions. For example, Lyakh was not only a deputy minister but also chief state inspector for environmental protection issues.

According to the Sevastopol newspaper OSTROV KRYM, in June 1942, on orders of Commander F.Oktyabrskyy, "poisonous compounds of military use"—mainly mustard gas—were dumped by Soviet sailors in the Black Sea, around Kazachya Bukhta, at the depth of up to 50 meters.

The terrible genie is buried at the bottom of the Black Sea. In the Baltic and the White Sea it will come out in 10 years. How long will it be for Ukraine?

How One Admiral Scared Three Ministers

One day Podgornyy visited a submarine from the Northern Fleet and wrote down in the log: "I was here. Very impressive. Nikolay Podgornyy." But he would have been even more impressed if he had stopped by the main base of the Black Sea Fleet.

Sevastopol harbor. Some 7,000 cubic meters of polluted water and 10 tons of oil flowed into it every 24 hours. Estimate damage: R328,000 at the prices of the time.

In the mid-1980's, there were 10 major oil spills. They cost R211,000. In 1990 the damage rose to R1 million. Pollution in the Sevastopol harbor surpasses the acceptable level by 30 to 100 times. In June 1988, it was 2,000 times above normal. Add to this some 10 military boats and submarines, half-sunken and rusting there.

Fleet fuel base at Inkerman. Who ever said that there are shortages of oil in Ukraine? There is a veritable source here, a magic lake the size of Independence Square in Kiev. And there is even more under ground.

Where did it come from? At first, the Navy blamed the Romans, who supposedly stored the Greek fire here during the Second Punic War. Then they put the blame on the Nazis. But the truth is different. In the 1970's, some fool thought of storing oil in abandoned mine shafts: an inexpensive and practical solution. Apparently, he was even decorated for his ingenuity. But in time the shafts developed cracks and the oil seeped into the sea.

And there is more. A proposal is being discussed to turn the Sevastopol harbor into a terminal for shipping oil to foreign money bags. Not only the harbor, but Lake Donuzlav, may be polluted with oil.

The base at Inkerman has been poisoning the sea since 1904. Especially strongly from the mid-1950's. But environmental protection authorities discovered this only in the mid-1980's. Incidentally, the famous Central Committee and USSR Council of Ministers Resolution No. 42, dated 16 January 1976, "On Measures to Prevent Pollution of the Black and Azov Seas" died in infancy.

26 March 1976. The Navy supply ship Vasilii Golovin, upon leaving Artbukhta, secretly dumped sewerage. This was noticed by some tourists who reported the incident to the State Inspection for the Protection of the Black Sea. The environmentalists confirmed: 24 kilos was dumped, and damages amounted to R5,000. But they were not allowed onto the military ship; the Navy itself wrote a report declaring the the Vasilii Golovin caused no harm to the sea.

Early 1992. The beautiful cruiser Moskva spilled fuel into the sea. Fortunately, it did not form a film but spilled as a wave. But, once again, no one was allowed to investigate: the excuse of secrecy never failed. Meanwhile, the military prosecutor's office was asleep. Its full official name was the Military Prosecutor's Office of the Black Sea Fleet: they would not be sticking their necks out.

Yu. Shcherbak, the former minister of environmental protection of Ukraine, kept sending angry cables to the commander of the Black Sea, but the old salt did not even blink.

The state spent considerable sums to equip Navy ships with special containers for refuse, but the mighty Black Sea Fleet has virtually no ships to collect them. Ships the world over transfer their left-over fuel to special collection boats, but the admirals have few of them, as well.

Soviet military boats, unlike Western ones, have no environmental protection equipment and dump all their garbage into the sea. While they often drive their sailors to exhaustion by making them scrub the decks until they shine, mates, captains and admirals at the same time successfully turn the Black Sea into a cesspool.

The Sevastopol Navy Plant named after Sergo Ordzhonikidze, the Iron Commissar, quietly dumped sulfuric acid into the Chernaya river.

The navy wharf in Nikolaev, Plant imeni 61 Communards, was building the flagship Komsomolets Ukrainy, the pride of the Navy. The ship was not finished, but the Ingul river was polluted with paint, diesel and oil.

The well-known resort Kuyalnik is harmed by the navy installation in the village of Krasnosilka. The same happens in Yevpatoria, Kerch, Feodosia, Balaklava, Khersones, Ismail and Nikolaev, in short, everywhere where the Navy has a presence.

In the late 1980's, spurred on by perestroyka, two ministers—D. Protsenko, the head of the UkSSR State Environmental Protection Committee, and V. Tkach, the UkSSR minister of water resources—entered into a mild confrontation with Admiral Khronopulo, the commander of the Black Sea Fleet. Please be so kind to forgive us, respected comrade admiral, for disturbing you in your important work, but could you reduce just a little the dumping of oil into the sea? Khronopulo paid them no attention; on the contrary, he apparently ordered his assistants to telephone Kiev and to cut the ministers down to size. What does it matter, nature, if we are protecting the sacred borders of our Motherland? The ministers held their tongues.

But soon Dina Yosipivna Protsenko was caught up in the Golsiysky forest scandal and was replaced by Viktor Lazarovich Fidonenko, a man who had risen through the ranks of the republic's agricultural industry sector. A new broom sweeps in a new way, and the fresh minister, who had not yet suffered his share of hard knocks, decided to set things straight on the Black Sea. He sent one petition to Sevastopol, then another. He also ordered his services to start catching old salts on the spot, and fining them. This was the response he received from the admiral:

Since 1989, the Special Inspection for the Protection of the Black Sea, which is currently under your management, has started to make claims and conduct investigations of the fuel base of the Fleet for the purpose of extracting damages for the pollution of the Sevastopol harbor with oil products.

This year, the fuel base has already received three claims totaling R85,800, of which two were reviewed by the state arbitration commission of the Crimea Oblast (for R9,300), and one by the state arbitration commission of the UkSSR (for R76,500).

In September came yet another claim for the sum of R168,600; another, for R250,000, is being prepared even though the special reserve at the fuel base bears no responsibility for the pollution of the sea with oil products and has experienced no accidental spills...

Taking everything stated above into consideration, I request that you, as the head of the UkSSR State Environmental Protection Committee, take all objective circumstances into account and order the Special Inspection for the Protection of the Black Sea to DESIST from submitting complaints and suits against the fuel base of the Fleet...

Systematic extortion of large monetary sums from the Fleet for the alleged violations of water protection laws, which were not, objectively, the result of the Fleet's activity, catastrophically reduces the Fleet's ability to contribute to the repair and construction of capital water protection structures.

Please inform me of your decision.

Admiral M.Khronopulo, member of the Central Committee of the Communist Party of Ukraine.

That was exactly how he signed it, member of the Central Committee of the Communist Party of Ukraine, without any "respectfully yours." The hint was clear.

To poison the life of the environmental protection minister further, he also complained to the Council of Ministers, to Anatoliy Sergeevich Statinov. Viktor Lazarovych Filonenko bit his tongue and began to fear Khronopulo, shifting his efforts to the strengthening of friendly ties with foreign countries.

Incidentally, under the new minister of the Environmental Ministry Yuriy Mykolayovych Shcherbak, the position responsible for the protection of the sea disappeared. Out of sight, as the saying goes.

As for Khronopulo, he began to ignore the environment altogether. Of the R5.2 million of capital investment funds allocated in 1990 to the Black Sea Fleet, he did not give a kopek for the environment.

He postponed the construction of treatment plants in many harbors to the period to the year 2005. At least in the past they used to control oil spills from aircraft, but now this practice was discontinued. And at Foros and other supersecret resorts such overflights were never allowed.

Khronopulo has since retired, and has become a business leader. Hold the flag high, Admiral.

March 13, 1991. In the Black Sea, at 44.08 northern latitude and 34.37 eastern longitude a heavy oil spill is discovered. Apparently, it was another destroyer that got washed. But while flights are coordinated with the military and the papers signed, the spill moves into the resort area, which are under special security protection and where environmentalists are not allowed within a rifle shot.

Today, with the excuse of an "unhealthy political situation surrounding the Fleet," ships have become completely off limits to environmental inspections; Sevastopol captains have now been given a unique opportunity to paint the Black Sea an oil-black color.

In the early days of the Russian Navy, legendary Admiral Sinyavin issued a strict order forbidding the pollution of the Don with refuse and sewerage. He understood that defense cannot be the used as an excuse for spoiling the environment. His modern heirs on the Black Sea, while constantly talking about building up the glorious traditions of the Russian Navy, in reality act differently.

Dolphins as Torpedoes

The No.7 bus goes to Khersones, to Kazachya Bukhta. There, at the outskirts of Sevastopol, a supersecret Navy installation is located, a dolphin aquarium. It opened in 1966. No money was spared: a villa was built and imported equipment was installed.

The installation had two goals: two teach military science to dolphins and to entertain the powers that be. The Fleet commander had his private yacht and dacha here. Next door was the Central Committee's resort Foros. Brezhnev and Ustinov came regularly, with their kids, friends and grandchildren, to admire the dolphins. Very exotic.

The military goal presented greater difficulties. Dolphins were drafted into military service by certain fishing boats which received the sanction of local fishing inspections. Their catching methods were barbaric, causing great losses. Sometimes up to 80 percent of the catch was lost.

At the Sevastopol aquarium, some 50 dolphins, beluga whales and sea lions began guarding navy bases and anchorages against enemy commandos, clearing sea lanes of mines, searching and lifting weapons from the bottom of the sea, destroying ships and commandos and repairing river dams. The imperialist tricks had to be guarded against not only on the ground and in the air, but under water, as well.

The idea was as follows. Special buoys would be installed along the perimeter of the base. A dolphin would swim to it, press a button, get a fish and continue on. If it noticed enemy divers, it would shoot at them with an explosive packet and get away. An explosion—and the enemy commandos are no more. And what about the dolphin?

The idea was barbarically stupid. What if the dolphin gets ill or confused and blows up its own boat. Or shoots a wrong diver? Each action provokes counteraction. Offensive weapons produce defensive weapons. The enemy, suspecting a possible attack from dolphins, seals, sea lions, the Loch Ness monster or any other creature with a tail, may simply poison the given section of the sea. Intelligent and kind dolphins, which have been registered in the Red Book, and their friends would perish. But the admirals do not care. The goal has been set, the task has determined, the funds have been allocated. Let us go fishing, to catch more dolphins.

According to our information, bases where sea animals used to carry out their military service, or where they may continue to serve today, are spread throughout the former USSR: in the Far East, in Murmansk Oblast and in the town of Dalniye Zelentsy, where apparently experiments on seals were conducted.

It is sad that the evolution of our admirals' conscience lags behind the development of technology and the progress of reason. The Americans have long given up on Navy dolphins. But not we.

Nuclear Power Stations Record 239 'Accidents' in 1993

AU2401141694 Kiev HOLOS UKRAYINY in Ukrainian
21 Jan 94 p 4

[Unattributed report: "Atomic Electric Power Plants [AES] Are Coming to Our Help"]

[Text] As reported by Ukraine's State Committee for Atomic Energy, last year, Ukrainian nuclear plants produced 75,238,900 kilowatt/hours of electricity. This is 111 percent of what was planned. The energy output of the Zaporizhzhya nuclear power station accounted for 42.76 percent of the total amount of electricity produced by all the nuclear power stations.

At the same time, the extension of the period of maintenance work at the Khmelnytsky nuclear power station and individual faults in the operation of all of the nuclear power stations led to the failure to produce 8,071,110 kilowatt/hours more. Last year, a total of 239 accidents were recorded at nuclear power stations. As a result of 62 of them, power units were halted, and 109 led to power reductions. None of the accidents involved an increase in the radioactive background at the stations or around them.

In 1993, the share of the energy produced by Ukrainian nuclear power stations increased again. While in 1990, it amounted to 25.7 percent; in 1991—27.1 percent; and in 1992—29.4 percent; in 1993, it reached 32.9 percent. Since 18 January 1994, five Ukrainian nuclear power stations have been producing 42 percent of the total daily output of electric energy. Problems with deliveries of organic fuel are making themselves felt.

U.S. Firm To Help Store Nuclear Fuel Waste

*LD2901094594 Moscow ITAR-TASS in English
0906 GMT 29 Jan 94*

[Text] Zaporozhye January 29 TASS—The problem of storing nuclear fuel waste at Ukrainian nuclear power plants will possibly be resolved with the help of a

contract concluded between the Zaporozhskaya AES amalgamation and the U.S. Duke Power Company.

Ukraine has no facilities to process nuclear fuel waste. Earlier, processing was done in Russia. Ukrainian nuclear plants have stockpiled a lot of used magazines after Russia's refusal to receive waste for processing. They are now kept at "cooling" ponds which are virtually filled up.

If the problem is not resolved in the next 12-18 months, operating power units of nuclear plants should be switched off one by one.

The UKRINFORM news agency reports that storage facilities of the Duke Power Company have a general licence of the U.S. leading control organisation and are already in operation at three American nuclear power plants and two nuclear laboratories.

The Zaporozhye nuclear power plant has already started work to implement the contract: an ecological and technological feasibility report is now being drafted.

If this and following work is successful, Ukraine will have the first stage of such a storage facility for nuclear waste by the end of 1995.

In the agency's opinion, the construction of similar storages at other nuclear stations will help stabilise the situation in this field and to resolve the problem of temporary storage of nuclear fuel waste.

REGIONAL AFFAIRS

Eureka Funds Joint Rainwater Pollution Monitoring Project

BR1901144494 Paris INDUSTRIES in French
Nov-Dec 93 p 17

[Article signed Patricia Labiane: "A 'MUST' For Avoiding Water Pollution"]

[Text] Just one storm and everything is overflowing. The sewers spill out onto the land, the water is full of heavy metals and hydrocarbons, etc. Heavy rainfall can multiply by up to 10 times the rate of pollution recorded during periods of dry weather. Water treatment stations are not capable of handling pollution exceeding three or four times that for dry weather conditions and do not perform their regulating role. The MUST [expansion unknown] project, launched by the Corporation for the Treatment and Economic Development of Water [OTV], a subsidiary of the Compagnie Generale des Eaux [CGE], proposes checking the overflow of waste water after periods of heavy rainfall. The European scientific research program, EUREKA [European Research Coordination Agency], found the scheme attractive enough to award it its European label last June.

The MUST technology will be implemented progressively over the next four years. Of the 96.6 million French francs [Fr] it will cost, France will contribute Fr32 million, Fr10 million of which will come from the Ministries of Industry, Post and Telecommunications, and Foreign Trade.

The project, which replies to a European directive of May 1991, combines 10 industrial partners from four Community countries. In addition to OTV from France, project leaders include the Danish pollution removal systems engineers I. Kruger, the Finnish chemical reagent producers Kemira Kemwater, and the British modeling researcher Wallingford Software. OTV, the European leader in the design and production of water treatment plants, is the prime contractor, assisted in France by other CGE subsidiaries: the Anjou Research economic interest grouping—which centralizes the group's research work—and Cochery-Bourdin-Chausse, specializing in road infrastructures.

Precise Statistics

The project corresponds to a market with local communities estimated to be worth several hundreds of billions of francs over the next 20 years, a large share of which should return to the Compagnie Generale des Eaux. On the practical side of things, the project will propose "reservoir highways" underneath roads to collect rain water, new physical-chemical settling techniques for treatment plants, a system for storing the most polluted water before treatment, treatment plant biofilters that are better suited to respond to large fluctuations in flow,

sensors to inform the plant of the level of pollution in the water that will be arriving, etc.

Computerized Rain

The project also envisages carrying out a whole series of statistical studies that will simplify the adaptation of water treatment equipment. Patrick Binot, OTV's deputy technical director and head of development, explains: "For a given period, a rainfall curve is run through a computer model to determine the amount of polluting substances released in an average year by a given network and treatment plant, which can thus be minimized." This gives a whole armory with which to face up to any rain shower.

AUSTRIA

European Union Official Stresses Importance of Environmental Protection

AU2001182494 Vienna DIE PRESSE in German
20 Jan 94 p 4

["das"—signed report: "Environment—Winners on Both Sides"]

[Text] Vienna—European Union [EU] Director-General for Environmental Affairs Laurens Jan Brinkhorst said in Vienna that it was wrong to believe that Austria could be outvoted in the European Union by less environment-considerate member states. He rejected such concerns. Environmental protection was not a beauty contest, he said, or a football match of everyone against everyone else; so there would be winners on both sides, once the chapter on environmental issues in the membership negotiations was concluded. This is what Brinkhorst and Environment Minister Maria Rauch-Kallat stressed, who added that she assessed the environment package of December as "gratifyingly favorable."

Brinkhorst spoke about the changed significance of the environment, which manifested itself in the European Commission's Whitebook of December. According to this study, environmental protection was no longer considered an obstacle but was viewed as a condition of lasting economic development, as progress in the area of competition, and as a job creating instrument. Environmental protection in the European Union was a dynamic process, which in recent years had made considerable progress and in which the European Union needed Austria as a partner, said Brinkhorst.

The director general, who is also responsible for nuclear safety, said that a country's decision for or against nuclear energy was not influenced by the European Union, whereas nuclear safety was a common affair. Environment Minister Rauch-Kallat cited this EU task to justify the fact that any contribution made by Austria, which rejects nuclear power in its government policy, will flow into Euratom's nuclear research.

FINLAND

Consensus Seen for New Policy To Protect Forest Environment

94WN0113B Helsinki HUFVUDSTADSBLADET
in Swedish 28 Nov 93 p 17

[Article by Katarina Koivisto: "Finnish Forestry Acquiring an Ecological Dimension"]

[Text] Finnish forests are growing older all the time and forest growth exceeds the amount of timber that is cut. Thus there is no reason for concern on this score.

But to a large extent the aging Finnish forests are also so-called managed forests, forests that have already been affected by logging and forest management. These forests lack the really old trees, the dead and rotting trees and vegetation that many fungi, beetles, mosses, and lichens need for survival.

"We have talked a lot in Finland about forestry and how to take care of our managed forests without paying enough attention to the ecological dimension and the multiplicity of species," said chief supervisor Pertti Rassi of the Environment Ministry. "Nor has enough research been done in the 1980's on the effect efficient forestry has had on the flora and fauna in our forests."

But now there is agreement that ecology must be taken into account in forest management and no irreparable damage has yet occurred, according to Rassi. He is also chairman of the working group that is making an inventory of Finland's old forests. The inventory of southern Finland is complete but work is still being done on a list of forests in Lapland.

There is also a political consensus on the need to protect our last natural forests and the government could issue a directive as early as next week on the preservation of around 10,000 hectares of state-owned forestland in southern Finland. There is also a need to protect around 5,000 hectares of private land, but according to Rassi this will be an expensive operation.

Thickets, Scrub Growth Scarce

Around two-thirds of Finland is covered with forests today and around 2 percent of the forests are part of a protected area. In the southern part of the country only 1 percent of the forests are protected; the big protected areas are north of Uleaborg. According to Rassi there are also gaps in the mapping that was done to determine the protection needs in Lapland south of the Arctic Circle and there is a special need for increased forest protection in this area.

"We estimate that there are at least 65,000 hectares of forest worth protecting in Lapland," said Rassi, whose working group has now received an expanded mandate to inventory the Lapland forests. Most of the projected protection areas are located on state-owned land.

Even if regional forestry boards were reprimanded for logging and inadequate protection of their forests, there would be no very old forests left on privately owned land, Rassi pointed out. Private forests and those belonging to logging companies have been managed according to economic principles in order to produce the biggest possible yield.

Research Lagging Behind

Sound forestry became a common term back in the 1980's, but the concept was not given much weight in Finland, according to the Environment Ministry supervisor. Biodiversity and the multiplicity of species have been lacking in forest research here, while in Sweden, for example, it has been included in research since the 1970's when they began discussing these issues there.

The endangered species in Finland that have received the most publicity and are dying out precisely because of the lack of old forests are the white-backed woodpecker and the flying squirrel. But there are also other woodpecker species and many kinds of beetles and fungi that do not survive in managed forests. There is not enough space for species that live solely in thickets or in old scrub growth in particular.

When considering which areas should be preserved and protected, forest age and structure are taken into account, Rassi noted. The idea is to make it possible to ensure the survival of species in these areas and to provide a sufficiently varied forest environment that also contains old and rotting trees.

Species Must Now Be Preserved

The basis for forest management today, one that all sides are in relative agreement on, is to prevent other species from dying out in our forests, Rassi said. One problem is that as a result of the lack of research in the 1980's we lack a clear picture of what has actually been lost, he complained.

But if we look at research results from Sweden and try to apply them here, around 15 percent of Finnish forests should be protected to safeguard biodiversity. Preserving the animal species that exist today will be a very demanding task, according to Rassi.

"To do this, approximately 1 million hectares of forest would have to be designated as protected areas and we are not yet even halfway there," he said. "There are simply not enough economic resources to protect all the forests that should be included."

However, forestry can be managed differently, and in recent months the people in charge of practical logging operations in the forests have been retrained in accordance with the principles of sound forestry, Rassi said. There is also agreement on which methods are sound, he said, so these kinds of measures should eventually be seen in the forests. One problem when one discusses forests and growth is that the time perspective is so long

that it is hard to see the results of various measures in the period of a single generation.

Forests Get Along Without Us

"It will be five or 10 years before we have research results that tell us what should be done in the forests, even though we need the results now," Rassi pointed out. "Much time will be lost before the decisions that are made by politicians and the authorities get down to the concrete level in the forest, I fear."

The worst that could happen is a failure to prevent more species from becoming extinct and a continued decline in the number of species that cause irreparable damage. If we get into a situation where fungi, lichens, and beetles have disappeared and the forest cannot get along without human assistance and intervention, we will have caused irreparable damage, he pointed out.

In the past forests renewed themselves as a result of forest fires, for example, and Rassi thinks controlled burning is still a good way to renew forests. Unfortunately it is also an expensive method, he noted.

The age structure in our forests is such that the forests are now growing older, and efficient forestry and managed forests have not caused any damage that cannot be repaired, in Rassi's opinion. He is now hoping for a comprehensive inventory that also includes private forests. The working group that is currently reviewing the forests in Lapland should finish the job in 1995.

Ministry To Promote Biodiversity in Forests

94WN0113C Helsinki HUFVUDSTADSBLADET
in Swedish 8 Dec 93 p 8

[Article by Katarina Koivisto: "Inquiry To Polish Our Forestry Reputation"]

[Text] The Environment Ministry has appointed a one-man board of inquiry to prepare a strategy that will guarantee biodiversity in Finnish forests. The strategy will be ready by the end of February and will also be aimed at improving Finland's reputation in forestry circles, according to Environment Minister Sirpa Pietikainen. The strategy will be adapted to the environmental program for forestry that the Ministry of Agriculture and Forestry is currently drafting.

The forest strategy will be the Environment Ministry's position on how Finnish forests should be managed and protected and as such, according to Pietikainen, it will provide guidelines for both state and private forestry. She does not think a decision in principle at the government level is needed on this issue.

"The Environment Ministry is the authority that is responsible for forest management and biodiversity, therefore the ministry's position is the same as Finland's position," Pietikainen said.

Behind the need to draw up an integrated strategy on forestry and the protection of old forests in our country lie both the principles Finland is committed to in accordance with the UN's Rio conference on the environment and development and the reorganization that is currently under way at both the forestry and environmental administrations. In addition the recent discussion of forest policy both in this country and abroad revealed a lack of knowledge that could damage Finland's reputation on forestry issue, the environment minister said.

Some 727 of the endangered species in this country, 43 percent of the total, live in forests. To preserve the abundance of species it is important to also preserve the old primeval forests, and the working group that has reviewed the need to protect old forests has proposed protecting 23,000 hectares of forestland in all. Last Friday the first specific areas were protected in accordance with the group's proposal, a unified area in Talaskangas and scattered areas in western Finland.

Next year a supplemental proposal will also be presented on the protection of old forests south of Uleaborg on both state and private lands. By the end of October 1995 another proposal on protecting forests north of Uleaborg will be ready.

Currently there is a shortage of protected areas in southern sections of Lapland, according to the Environment Ministry. Kajanaland and northern Lapland have more protected forests. Some 30,000 hectares of old forest in southern Lapland and Kajanaland are protected and less than 10,000 hectares of this kind of forest are protected in southern Finland. Finland has 41,500 hectares of protected forests in all, representing 2.3 percent of the country's forest area.

However, the Environment Ministry points out that it is not enough to protect forests; scattered protection areas do not guarantee the survival of species. Forest management also plays a central role and education in sound forest management that is more compatible with nature is included in training programs in forest districts.

Sale or Use of Asbestos Banned

94WN0113D Helsinki HUFVUDSTADSBLADET
in Swedish 15 Dec 93 p 4

[Finnish News Agency (FNB) report: "Total Ban on Asbestos Next Year"]

[Text] The sale and use of asbestos and products containing asbestos will be banned in 1994. There has been a ban on importing and producing asbestos since the beginning of this year. When the new regulations go into effect, asbestos will be permitted only in certain special cases.

Chief supervisor Kirsi Makela of the Labor Ministry's Worker Protection Division said the Finnish regulations are stricter than those in the European Union countries.

According to the European Economic Area (EEA) agreement, Finland has a right to stand by its stricter rules.

Widespread Minerals Contamination of Drinking Water

94WN0121A Helsinki HELSINGIN SANOMAT in Finnish 13 Dec 93 p 6

[Article by Pasi Tuohimaa: "Drinking Water for Hundreds of Thousands of Finns Doesn't Fulfill EEA Requirements"]

[Text] Stricter rules become effective at the end of the year. Removal of excess manganese and iron costs 2 billion markkas.

It is estimated that the drinking water used by hundreds of thousands of Finns will not be within legal limits at the beginning of next year, when new restriction become effective in connection with the EEA [European Economic Area] treaty. In the near future, 100 to 200 groundwater utility companies and about 30 surface water utility companies will have to take measures concerning excess levels of iron and manganese.

Small water intake plants, which are located in groundwater areas with high iron levels, will face the toughest challenge. The water cleaning bill will, relatively speaking, be the highest for them. At the same time, pressure to increase water rates will grow.

Majority Does Not Fulfill Manganese Requirements

A work group appointed by the National Board of Waters and Environment estimated that, by the year 2000, Finland must invest 2 billion markkas in order to bring all of the country's drinking water up to EC standards.

The new drinking water regulations apply to all water supplies with over 50 users. The most urgent repairs must be performed at water companies servicing over 5,000 people, as they must immediately file reports with the EU [European Union]. Today, almost half of the large water utility companies exceed the accepted limits.

The current target manganese level is 0.1 mg per liter, while the EU directive specifies less than .05 mg per liter. Water quality requirements, thus, become much more stringent.

Based on information from 1987, there are 60 water utility companies in Finland that currently are unable to reach the figures required by the directive, not even by considering annual averages. If we use as a frame of reference, as stipulated in the directive, the highest measured concentrations, most water utility companies in Finland are unable to satisfy the requirements.

The current iron target concentration of 0.2 mg per liter will become a requirement. Based on 1987 information, the average iron concentration of water treated and sent

out for distribution exceeds the target value at approximately 50 water companies. When tap water is tested, 140 companies exceed the limit.

The majority of these water utility companies are located in the provinces of Turku, Pori, Vaasa, and Oulu.

The iron problem is not felt that much by water utility companies in larger cities, which use surface water.

Based on the latest information, the only ones not affected by the more stringent water policies of health authorities are households using well water. It would be a significant problem in Finland to monitor every well, as there are about a million wells that are used by individual households. According to a study that was completed in the summer, of these, about 750,000 yield water of poor quality.

Directive Also To Apply to Dairies

However, the new regulations would apply to all water that is used in the industrial production of foodstuffs. A conservative interpretation of these rules would suggest that dairy farms, at least, would have to bring up their water supply to EC levels.

In reality, it is not possible to take care of all problems immediately, even if required by law. According to Senior Engineer Leena Hiisvirta of the Ministry of Social Affairs and Health there will be no transfer periods; the new regulations will become effective immediately.

However, the ministry can grant special dispensation to water intake plants whose water values exceed the permissible limits, on a case-by-case basis. Depending on the design of the necessary cleaning facility, the dispensation may be granted for anywhere from a few months to a few years.

But the authorities are still not intending to get too rough on the water utilities. Hiisvirta, who participated in the negotiations in Brussels last September, said that the new regulations will not be printed and distributed to district health and water authorities until February.

Same Problems in All Countries

Hiisvirta pacifies those who fear disciplinary measures by the EU Commission.

"All European nations have experienced the same kind of problems. The problems with the Commission are ironed out. The citizens' worrying is the largest problem. We do not follow the letter of the law anymore as we are used to, and the Finnish water supply is not as good as we had thought, after all," she said.

"If a water intake plant has not been granted dispensation, it is obligated to pay compensatory damages for, for example, damages caused by too high concentrations of iron," added Hiisvirta.

The current quality requirements for water used by households in Finland were issued in 1990. According to

Environmental Director Pekka Jalkanen with the Finnish Federation of Municipalities, even at that time, close attention was paid to permissible concentrations according to the current EC directive.

"The most significant change is that earlier quality targets or recommendations are now changing to quality requirements or regulations," he said.

The EU Commission does not differentiate between water health hazards and other quality requirements that, until now, have been the policy in Finland.

Industry Leader on Forestry Industry's Environment Role

94WN0121B Helsinki HELSINGIN SANOMAT
in Finnish 2 Dec 93 p 6

[Article by Pentti Laitinen: "Mining Counselor Casimir Ehrnrooth on the Environmental Debate: 'The Industry Must Take the Offensive'"]

[Text] According to Mining Counselor Casimir Ehrnrooth, the forestry industry has failed in bringing forth its own views in the environmental debate. "It is therefore extremely disturbing that the public debate has sunk as low as it has today," noted Ehrnrooth during his interview with HELSINGIN SANOMAT.

"It should be easy for the industry to participate in this debate, as it has nothing to hide," he noted.

Above the Wild Public Debate

Ehrnrooth, chairman of the board of Kymmene Oy, emphasized that he is an individual thinker when it comes to current issues surrounding the forestry industry.

In his view, it is possible that even the current management of the Kymmene Group may have different opinions on the matters. Ehrnrooth has been the chairman of the Central Federation of Finnish Forest Industries and the Central Federation of Finnish Industry for many years.

In Ehrnrooth's view, the forestry industry should embark on a counterattack that should use an information strike based on scientific fact as its weapon. This endeavor would be supported by an international panel of scientists.

"One can certainly find bad conditions in the field, but the discussion regarding them must be elevated to a higher level, above the wild public debate. New argumentation must be developed, because it has become evident that the industry is unable to hold its own in today's public debate," said Ehrnrooth.

According to Ehrnrooth, one should remember that within the forestry industry, significant changes have taken place by means of normal industrial evolution. For

example, in his view, Greenpeace and other environmental organizations have not contributed to the fact that the pollution of waters has decreased in severity to a fraction of what it was 20 years ago.

Ehrnrooth would like to see all the industry in Europe joining forces for a counterattack, as Finland, by itself, cannot dictate its views on the markets. "Precise argumentation is necessary, as intimations only worsen the situation," he said.

"It is almost inconceivable that the industry has been unable, in connection with the talk about recycling, for example, to present its views on the burning of waste. The debate is conducted on the terms of Greenpeace and other movements, and the industry's attempts to defend itself have met with varied success. A large portion of fiber-based wastepaper lends itself to recycling, but clearly the best way of getting rid of bad cut is burning, at today's technology level. That is fire without smoke," said Ehrnrooth.

According to Ehrnrooth, the industry has been unable to close its ranks, because, in a confused situation some parties will experience short-term competition advantages. "Each and every one may look inward and consider how to benefit from industry or national advantages," he said.

"We can react with calm to the German magazine DER SPIEGEL's recent attack on Finnish forestry, at least as long as the information is spread through pictures taken in Canada. We have at our disposal some solid weapons for a counterattack, when we consider that hardly any other country can manage its forest resources with the same competence as we, and major mistakes lie way back in time. The national economy should be given the opportunity to utilize the tax funds that have systematically been sunk into our forestry sector," said Ehrnrooth.

In domestic raw materials policies, Ehrnrooth still sees remnants of a closed economy. "Slices from the national economic pie were amicably cut for milk production and stumpage. Such an interlinkage is not allowed anymore," he added.

"The pricing of wood raw materials is a different story, and the producers are represented on the markets by a strong interest organization. It makes one wonder why anyone still gives it any credence, considering the bad advice it has dispensed to its members during the last few years," he noted.

"It is not the first time that the Forestry Association, which is owned by the producers, is pushing for price increases in the entire field of wood products. It is difficult for me to understand why other companies would have to follow the Forestry Association's lead. I would imagine that, in the future, large forestry companies would deal directly with the forest owners. When lumber prices are increasing the way they are now, it should also be reflected in the stumpage prices. On the

other hand, wood pulp prices are so low that it does not make sense to increase fiber prices," said Ehrnrooth.

"The dual role of the Forestry Association has been subject for discussions as far back as I can remember. However, the fact is that the interests of the industry represented by the Forestry Association are quite similar to the rest of the industry. Luckily enough, the disagreements regarding raw materials do not dominate the whole field," Ehrnrooth added.

"Instead of our returning to a policy of price recommendations, we should find other ways to peaceful solutions. My opinion is that, in a way, it is in society's interest that the wood does not rot in the forests. If we cannot reach an agreement on wood prices, we should consider, for example, the use of arbitration," he concluded.

Agreement To Aid Estonia With Oil Spills

94WN0121C Helsinki HELSINGIN SANOMAT
in Finnish 9 Dec 93 p 11

[Article by Jukka Perttu: "Finland Promises To Help Estonian Oil Cleanups"]

[Text] A bill has still not been issued for the Kihnu incident.

Finland supports Estonian oil cleanup efforts at sea. The environment ministers of both countries, Andres Tarand and Sirpa Pietikainen, agreed last Wednesday in Helsinki that Finland would support Estonian oil cleanup operations by offering, among other things, training, equipment, and expert help. Finland also agreed not to charge Estonia for all the costs involved in cleaning up after oil spills in Estonian waters.

The Finnish aid is financed by, among other things, adjacent area cooperation funds.

Finland intends to continue its support during a five-year transitional period, but the period may be extended, if necessary.

On the other hand, the permanent agreement signed by the environment ministers is based on equality, as each country is obligated to lend assistance in case of oil spills. The agreement provides the basis for cooperation between environmental protection authorities in case an oil spill accident happens in the Gulf of Finland.

Russian oil, for example, is exported through Estonian ports for foreign destinations.

Estonia's defenses against oil spills are still quite weak. The country has two vessels with oil recovery equipment. In addition, the Estonian Board of Navigation has ordered from Finland two 18-meter-long workboats. There is also some other oil spill equipment in the country. Senior inspector Olli Pakkala from the Ministry of the Environment said that the oil companies at the new oil terminal in Tallinn had acquired their own oil spill equipment.

Cooperation and Experiences

The cooperation between Finland and Estonia was put to the test last January when the coastal tanker Kihnu leaked oil into the waters of Tallinn. Two oil cleanup vessels and a sea rescue helicopter were rushed from Finland to provide help.

Sources at the National Board of Waters and the Environment told us that a bill covering the expenses had not yet been sent to Kihnu's owners. The board has been unable to issue a bill as it has not yet, in its turn, received all the outstanding bills from other agencies that participated in the operation.

Tarand Thanked for the Help

The ministers also signed a joint planning agreement and program for 1994. In addition, Tarand and Pietikainen have conducted negotiations regarding environmental cooperation between the two countries.

Tarand thanked for the help with a pleased smile: "Of all environmental aid received by Estonia, about half has come from Finland."

Pietikainen, on her part, praised the Estonian efforts to protect its shores. The country's coastline has been protected from builders.

Worsening Acid Rain Effects in Forests

94WN0121D Helsinki HELSINGIN SANOMAT
in Finnish 9 Dec 93 p 11

[Article by Sauli Korpimo: "Health of Finnish Forests Declining, Every Fifth Tree Suffers From Needle Cast"]

[Text] The health of Finnish forests is getting worse again. Needle loss came to a halt a few years ago, but during the last two years it has increased again. Now, 20 percent of all trees suffer from needle loss. In general, forest growth is still satisfactory, although, in more sensitive areas, one can see various symptoms of stress on the trees.

Needle loss among Finnish conifers is average, based on European standards. In Finland and Sweden, between 10 and 20 percent of all trees are damaged, and, for example, in Norway, Estonia, Germany, and Poland, the figure is 20 percent. The forests in Czechoslovakia are in the worst shape: Almost 60 percent of the trees are damaged.

Needle loss is used as a measure of tree vitality, or, in other words, their ability to survive, grow, and produce seeds. A tree has suffered needle loss if it has lost more than 20 percent of its needles, and it has been damaged if it has dropped 25 percent.

Researcher Martti Lindgren does not believe that air pollution has any significant effect on needle loss. In the southern parts of Finland, nitrogen and sulfur emissions have, in part, caused needle loss among pines.

"Aside from areas in the vicinity of emission sources, densely populated areas, and roadside areas, needle loss is primarily caused by the aging of trees and by unfavorable climate and weather factors," said Lindgren. He spoke about needle loss studies at a research convention arranged by the Forest Research Institute in Vantaa.

The greatest needle loss has been suffered by conifers in Lapland. Also, spruce forests in Kainuu suffer from needle loss. Pine forests on the south coast and in Ostrobothnia have suffered more needle loss than in other parts of southern Finland.

Needle loss has been suffered by 38.5 percent of all spruce and 11.5 percent of all pine. The defoliation percentage for deciduous trees is 18.

FRANCE

Water Nanofiltration Experiment Implemented

BR2101141494 Paris BIOFUTUR in French Dec 93
pp 37-40

[Article signed Catherine Moulin, Pierre Cote, Michel Mercier: "Nanofiltration: The Future of Water" "]

[Text] Nanofiltration is a membrane technique complying with a number of limitations, such as the erosion of resources, increasing demand, the safety of supply networks, and drinking water quality, while presenting more than one advantage. A prototype station is supplying the inhabitants of Auvers-sur-Oise. They are the first people to drink water treated by nanofiltration which is softened and has no taste of chlorine.

The development of membrane techniques, which made their first appearance in water treatment some 10 years ago, is based on various factors. These include increasingly severe legislation governing the quality of drinking water, the need to take into account any possible side effects of treatment due to the addition of reagents, the erosion of resources, and the technological progress made to make these processes competitive.

Nanofiltration, which bridges the gap between ultrafiltration and reverse osmosis, complies with the new standards for drinking water. It gives precise control over the quality of the water produced. Other points in its favor are its compactness and the simplicity with which it can be used, checked, and maintained.

The Membrane Barrier

The term nanofiltration is used for membranes that have a molecular weight removal threshold for organic compounds of close to 250 daltons. This corresponds to the hypothetical existence of pores 1 nm in diameter. These composite-type membranes are formed of a hydrophobic support bearing positively charged hydrophilic chemical groups. In this way, the traditional properties of an ultrafiltration membrane are strengthened by a repulsive force enabling the removal of similarly charged ionic

species and their counterions. It is these groups that are responsible for the ionic action of the nanofiltration membranes—bivalent species are held back at a rate varying from 70-90 percent, making it an excellent process for water softening (the removal of Calcium, Ca^{2+} [superscript], and magnesium, Mg^{2+} [superscript], both responsible for water hardness) and desulfurization (removal of SO_4^{2-} [superscript]), while the retention rate for monovalent ions is lower (less than 60%).

Less Chlorine in the Networks

These membranes are also an excellent physical barrier to small dissolved molecules and micropollutants such as Atrazine. They are particularly effective at removing trihalomethane precursors and humic and fulvic acids.

Another aspect of nanofiltration membranes is their capacity to retain organic matter. They remove the dissolved biodegradable organic carbon which is the part of dissolved organic carbon that feeds the bacteria in supply networks. Removing it avoids the development of biofilms and therefore reduces the final rate of chlorination normally used to disinfect networks.

Lastly, these membranes operate at pressures of less than 10 bars. They therefore couple the ionic advantages of reverse osmosis with the low operating pressures and consequently reduced energy consumption of ultrafiltration.

The Mery 400,000 Project

The Ile-de-France water syndicate [SEDIF] supplies drinking water to 144 communes in the Paris region, representing four million inhabitants. It is continuing in its efforts to counter the erosion of resources and to conserve the same water quality throughout the supply network in a region of growing demand. This has already been achieved for the treatment processes in its two largest production plants at Neuilly-sur-Marne and Choisy-le-Roi (800,000 m³/day).

The Mery 400,000 project is the opportunity to research into both water production and distribution. At the suggestion of its administrator, the Compagnie Generale des Eaux [CGE], SEDIF has set itself the goal of increasing the capacity of the Mery-sur-Oise plant from 270,000 m³ to 400,000 m³ per day. Fed by the river Oise, this plant now treats water for 600,000 inhabitants. The main stages in the treatment system are: preozonation and storage; coagulation and settling; biological sand filtration; ozonation and biological filtration on granular activated carbon; postozonation; and finally postchlorination before distribution.

Nanofiltration At Work

After an initial study into the different processes that could be used to achieve this aim, SEDIF and CGE wanted to test nanofiltration by building a prototype plant with a capacity of 2,800 m³/day on the Mery-sur-Oise site.

The membranes in nanofiltration are packed in spiral modules. This kind of module has a small dead zone and a relatively low investment cost. On the other hand, it is very sensitive to clogging and requires quite exhaustive pretreatment. Two sheets of membrane are placed on either side of a spacer material. The three sheets are sealed along three sides to form an envelope. The open side is attached to a perforated tube that collects the treated water. The envelope is then wrapped around the tube with a spacer generating turbulence on the concentrate side. The rolls of membrane are placed inside a pressure tube with a system of joints at either end ensuring its watertightness. In normal operation, the water to be treated circulates in the interstices formed by the spacer. Pressure forces some of the water to penetrate the inside of the envelope and to collect in the central tube.

Portrait of a Treatment System

The use of membranes, the choice of operating conditions (pressure, tangential velocity, temperature, conversion level, etc.), and the correct match of pretreatment system to modules are all of vital importance if system performance is to be maintained for as long as possible. The stages in a nanofiltration treatment system are: pretreatment of the raw water (settling, sand filtration, and 5 μ m safety prefilters); acid conditioning of the raw water to prevent the precipitation of carbonates and of calcium and magnesium hydroxides; conditioning by chelating agent for sulfate salts (CaSO_4 , etc.); pressurization using a pump; nanofiltration; post-treatment of the treated water, consisting of restoring the carbonate balance and, if necessary, remineralizing the raw water (often a simple aeration is sufficient); and final chlorination.

With a degree of economic and technological progress, we can envisage the chosen solution producing water with a very low dissolved, biodegradable organic matter content, and that is free from pathogens, and softened. This solution also makes it possible to reduce the number of treatment stages, since water polishing by nanofiltration replaces the stages of ozonation and biological filtration on granular activated carbon.

The Water at Auvers-sur-Oise

Started up in July 1992, the nanofiltration prototype has been supplying the commune of Auvers-sur-Oise (6,000 inhabitants) since February 1993, with the agreement of the health ministry and the French council for public hygiene.

The water entering the prototype still contains 3.6 mg/l of dissolved organic carbon, approximately one third of which (1.1 mg/l) is biodegradable and could benefit the regrowth of bacteria in the distribution network. Its chlorine demand, in the region of three mg/l may lead to the formation of byproducts such as chloroform (CHCl_3), trihalomethanes (THM), and total organohalogens (TOX). One half of the organic matter in the

water supplying the prototype is composed of humic substances. The other major components are hydrophilic acids (30 percent), carboxylic acids (five to eight percent), and carbohydrates (five to ten percent). In addition, 75 percent of the dissolved organic carbon has a molecular weight of less than 5,000 daltons, much of which (25 percent) has a molecular weight of less than 500 daltons. This justifies the use of nanofiltration membranes with a removal threshold in the order of 250 daltons.

The water produced after nanofiltration is of a very high quality. Ninety percent of the dissolved organic carbon is removed and the dissolved biodegradable organic carbon concentration is less than the detection limit (0.1 mg/l). The chlorine is no longer consumed by the organic matter and remains at a more stable level in the network. The two effects are complementary: the low concentration in biodegradable organic matter and the chlorine stability make it easier to protect the network against bacterial contamination.

It was possible to confirm this on the Auvers-sur-Oise distribution network which is supplied with nanofiltered water. A low residual chlorine level at the plant outlet (0.1 mg/l) was sufficient to keep the water within the bacteriological standards.

Nanofiltration is therefore considered a leading candidate for doubling the Mery-sur-Oise plant's capacity. It presents a number of advantages: the production of water free from pathogenic micro-organisms, a reduced level of dissolved biodegradable organic carbon, the notable possibility of reducing the level of chlorination before distribution and thus the production of water free from chlorination byproducts, the removal of micropollutants such as pesticides, and the reduction of bivalent ions (hardness and sulfates). The inhabitants of Auvers are the first European consumers of water produced using this innovative process. There is no doubt that it will find its place in modern water treatment systems.

GERMANY

Large Companies Try To Monopolize Trash Market

94WN0073A Duesseldorf VDI NACHRICHTEN
in German No. 42, 22 Oct 93 p 2

[Article by Lutz Bloos: "Large Outfits Play Monopoly in Waste Market"; [Subhead lines: "Federal Monopolies Commission Criticizes Increasing Concentration Within Waste Management Sector"; "Federal Association of German Waste Management Willing to Withdraw Again from DSD"]]

[Text] Hamburg, 22 October 1993 (VDI-N)—Is waste management henceforth only something for large outfits? Last Friday in Hamburg, the yearly meeting of the Federal Association of German Waste Management

[BDE] focused on the concentration in the waste management sector and energy supply firms' commitment to this market.

There is more of a market for waste than ever before. Hellmut Trienekens, president of BDE, estimates that by the year 2005 there will be surge in Germany's market from the current approximately DM75 billion to nearly DM200 billion. This includes building rubble, crushed road surface and industrial waste.

It is large companies that are increasingly engaged in this lucrative business. In the past, the monopolies commission, the top watchdog over the market economy and competition, repeatedly voiced sharp criticism of the process of concentration in the sector. The monopolies commission's president, Dieter Wolf, did not even refrain from criticism in Hamburg. According to Wolf, it is, above all, the activity of the large energy supply firms in taking over the numerous small and mid-size waste companies that constitutes a threat to competition. In Wolf's words: "More and more I get the impression that monopoly yields on the protected energy supply markets are henceforth being applied profitably to other markets." Hence, at present, of nearly 1,000 waste management firms, only 10 large ones are getting half of the turnover in the waste management sector. Nor did Wolf spare criticism of environmental minister, Klaus Toepfer, who was in attendance and who previously had eloquently supported his recycling model. Wolf lamented: "As early as the introduction of the packaging ordinance, many of the monopolies commission's misgivings were not taken into consideration." Without the restrictions on competition, it is impossible to give practical application to the ordinance. Accordingly, the Dual System Germany [DSD] is a demand monopoly.

Wolf was unable to recognize any kind of advantage compared to the government waste management monopoly that prevailed earlier. As a consequence, business is stocking almost exclusively products with the green dot. That is tantamount to a restriction on a company's freedom of organization since no merchant has any other choice should he be unwilling to take back the packaging himself. Wolf described this situation as "strictly prohibited under monopoly law." The monopolies commission president expressed it quite harshly: "This kind of system passed on in the guise of civil law tends to exploit the citizenry."

For this reason the Federal Monopolies Office wants by all means to prevent energy supply companies from taking over the DSD. Solving DSD's financial crisis through waste management would entail heavy influence of waste managers. Not only their financial commitment but also the appointment of three DSD board members from waste management causes the monopolies commission to be mistrustful.

In any event, the BDE does not want to take over the DSD. At least that is what BDE president, Trienekens remarked. He is willing to give back his board mandate

immediately, once the DSD regains its financial standing and waste managers' demands are satisfied. Frank-Rainer Billigmann, in charge at BDE headquarters, argued in a similar vein. Waste management's stabilization of the Dual System has "helped" Toepfer's recycling model "to survive." Whereas he gave the environmental minister a hearty welcome, he greeted Dieter Wolf with a frosty: "We are interested in seeing your report." Earlier he indirectly accused the monopolies commission of overstepping its jurisdiction in criticizing the DSD's personnel policy.

Three German Towns Join Efforts in Environmental Policy

BR1201112094 Bonn DIE WELT in German 21 Dec 93 p 6

[Text] The German federal government set the targets—three towns now want to meet them. The towns of Wuppertal, Remscheid and Solingen have joined forces in a unique association to cut carbon dioxide (CO₂) emissions by 25 to 30 percent by the year 2005. They intend to develop a CO₂ reduction plan jointly at regional level. The project will be financed largely by the Construction and Housing Ministry of the land of North Rhine-Westphalia.

The most important sources have been known to science for a long time: industry, traffic and households. CO₂ is also released when electricity is generated from fossil fuels such as coal and oil. So energy consumption must be reduced and made much more efficient. Improved thermal insulation of buildings is one way of saving energy. Today's modern household appliances use a lot less power than at the start of the 1970's. Moreover, using local public transport instead of the car also helps to cut CO₂ emissions.

The three towns' activities will in the future be coordinated in a regional office. Initiative, a willingness to talk, and motivation are now required to bring about a consensus of those involved in authorities, associations and firms. The project will show its first results by 1995. Then it will also be clear where the universe of actions, set by the European Union, Federal Government, and laender, must be changed to achieve the great objective of CO₂ reduction.

Wuppertal chief executive Joachim Cornelius says: "The very fact that this forward-looking project is being tackled in the three large towns makes me optimistic and can only be of advantage." Many citizens are already wanting to take part.

Status of Wind Power Generation in Germany Summarized

Investment in Wind Generation

94WS0133B BERLIN INGENIEUR DIGEST in German Nov 93 p 51

[Text] By the end of 1992, there were 1,200 wind power installations in Germany. Rated output: 180 MW. Since

1974, the Federal Ministry for Research and Technology [FMRT] has promoted the use of wind energy, about 30 million marks are made available for this purpose annually. [This makes] a total of about 300 million German marks thus far—120 marks for large and 100 for small and mid-size installations, the remainder for R&D projects. Goals: acceptable costs for energy production with wind power, a noticeable contribution to the supply of electricity, reduction in energy imports, a broadening of the foundation of the energy supply, and a search for alternatives for the Third World. Through continued development in the technology of [wind power] installation, wind power generated current should become competitive by the end of the millennium.

Improvement in the technical availability of wind power installations is at the heart of the federal promotional program offered by the FMRT since 1989—"250 MW Wind." A good half of the installations within the scope of this program are operated by commercial enterprises, 30% by private investors, almost 15% by farmers and 3.5% by local authorities and associations. Together with a scientific measurement and evaluation program (SMEP), the data from the promoted installations will be collected for ten years and evaluated. As an incentive for their participation in the general test, operators of the windmills will receive from the FMRT a subsidy of six to eight pfennigs per kWh, plus 16.6 pfennigs for wind power generated current. Because of this promotional program, in 1992 growth in wind power installations was for the first time greater in Germany than in Denmark, the European leader (320 MW from nearly 2,300 installations). Worldwide about 2,300 MW are currently generated by from wind power. The USA has 15,000 wind installations with 1,600 MW in operation. In the EC countries the wind capacity is currently about 1,000 MW. The EC demonstration program THERMIE—which runs from 1991 to 1994—places emphasis on those energy technologies which would counteract the looming greenhouse effect through a reduction in CO₂ emissions. It is supposed to promote the market introduction of improved energy technologies and encourage cooperation across [national] borders. The energy research program JOULE II (Joint Opportunities for Unconventional or Long Term Energy Supply) also runs until the end of 1994. Within the scope [of this program], a new generation of large wind turbines of optimal size and technology is supposed to be developed. Seven projects, two of them German, have gearless 1 MW installations as their goal.

GDR Documents Reveal New Findings on Seveso

AU2001163494 Berlin BERLINER ZEITUNG
in German 17 Jan 94 p 3

[Report by Andreas Forster: "Was a Skillful Game of Confusion Staged Concerning 41 Barrels With Poison From Seveso?"]

[Text] Documents that are available to BERLINER ZEITUNG show that at least 47 tonnes of dioxin-containing waste from Seveso were stored at the special waste dump in Schoenberg in Mecklenburg.

The quarrel over the poisonous barrels from Seveso dramatically exacerbated once again in Schwerin last Friday [14 January]. At a mammoth meeting, at which 20 witnesses were heard, the members of the Schoenberg investigation committee wanted to finally clarify the question as to whether dioxin waste from the Italian town of Seveso reached the waste dump in Mecklenburg or not.

The atmosphere became solemn when the representative of the Swiss chemical concern, Hoffmann LaRoche, to which the Seveso factory ICMESA [expansion unknown] belonged, raised his hand to swear an oath. The 41 barrels with the deadly poison were incinerated in his presence in Basel in 1985. Thus, they can never have been buried at the Schoenberg dump ground, Heinz Hollinger, who is responsible for environmental protection at Hoffmann LaRoche, swore.

Belgian member of the European Parliament Paul Staes, from the group of the Greens, and his aide, the spokesman of the Greens in Luebeck, Guenter Wosnitza, presented a chain of evidence based on statements of eyewitnesses and hints in documents. Staes remembered documents from the Environment Ministry of the former German Democratic Republic [GDR] that he saw in 1990. They showed that the dioxin-containing waste from Seveso really did reach Schoenberg. Yet Staes was not able to present a single document proving the transportation or the storage in Schoenberg.

BERLINER ZEITUNG is now able to furnish this document. It has received documents from the former GDR Environment Ministry on the basis of which it can be proven for the first time that poison from Seveso did arrive in Schoenberg after all and that even more arrived than the supposed 6.5 tonnes of reactor waste in 41 barrels.

In January 1982, the Mannesmann Italia company, a subsidiary of the Mannesmann concern in Germany, inquired with the German authorities whether it was possible to store a larger quantity of waste at the Mecklenburg dump. It claimed that metal parts contaminated with 2,3,7,8-tetrachloride benzo-p-dioxin (TCDD), the most poisonous dioxin, were involved. Even the smallest dose of TCDD may cause genetic deviations over several generations.

The inquiry from the Italian Mannesmann company was registered under number I (for Italy) 18/82. "Seveso/Italy" was mentioned as the producer of waste.

On 3 March 1982, the supervisory commission of the special waste dump rejected the Mannesmann inquiry I 18/82, giving the following reason: Waste from "well-known poison scandals..., Seveso, for example," will not be stored in Schoenberg. Thus, officially, the GDR was

no longer involved in the deal with the Seveso waste. Internally, however, order I 18/82 was carried out, as documents have now proven.

In a "list of wastes" that arrived at Schoenberg between the establishment of the waste dump and 30 September 1985, the rejected Mannesmann order is also mentioned. Under "waste group 6—other wastes," I 18/82 mentions the delivery of calcium chloride residues. Total quantity: 47.482 tonnes.

Thus, it is clear that the Mannesmann company that was ordered to eliminate the hazardous waste from Seveso finally reached agreement on the deal with the GDR side.

To cover their tracks, the officials responsible for the waste dump simply declared the contents of the poisonous delivery wrongly. It is not known whether they stored the wrongly declared dioxin waste in a "poison bunker" or whether they simply dumped the dangerous material somewhere in the waste dump to cover up the affair.

Another suspicion has not been dispelled: More poisonous waste transports from Italy for which inquiries were sent as early as in 1982 arrived until 30 September 1985. In three cases, they were declared as mercury-containing by-products and in one case as methyl metal chrylat residues. Were these deliveries also declared wrongly? The documents from the GDR Environment Ministry available to BERLINER ZEITUNG also make the game of confusion concerning the 41 Seveso barrels that has lasted for 10 years appear in a new light. It seems to become finally clear what the barrel operation really might have been—a gigantic diversion. Bernard Paringaux, the French specialist for waste disposal and one of the key actors in the barrel comedy, confirmed the following to European Parliament member Staes. "Most of the Seveso poison went somewhere else. The responsible officials wanted to direct the whole attention of the press and the public to the 41 barrels, which they really achieved," Paringaux told Staes.

The spectacle for the media had the required effect. Whereas the world speculated about the background to the mysterious story and the authenticity of the barrels that had disappeared, the transportation of the major part of the poisonous Seveso waste was arranged in Milan.

An internal communication from Paringaux' company Wadir to Mannesmann Italia reads: "When the first part will have been shipped, we will meet in Milan where you can determine the modalities and the dates for the disassembly and the transportation of the last parts with Mr. Paringaux." The "final removal is estimated to involve approximately 150 tonnes."

The question as to why the entire show concerning the Seveso poison was staged with international participation has not yet been answered. One possible reason might be that a much larger quantity of highly toxic

substances resulted from the accident at the ICMESA company than has so far been admitted.

However, this would only be possible if something other than the harmless trichlorophenol was produced over the weekend during the mysterious special shift when the grave disaster occurred.

According to Paul Staes, reports by eyewitnesses support this theory. They mention a much higher working temperature of the reactor than would have been required for the production of trichlorophenol. A scientist who visited the factory after the accident discovered a second secret production room behind the reactor that caused the damage, in which barrels were filled with chemicals.

According to Staes' theory, a highly poisonous herbicide containing various dioxins was produced for military purposes in Seveso. Thus, a much larger quantity of toxic waste resulted from the accident than the officially admitted 6.5 tonnes.

The official quantity that was filled in 41 barrels according to the rules might have been incinerated in Switzerland in 1985 to calm the public down. However, the scaring conclusion of this version might be that not only the approximately 50 tonnes of the deadly substances but twice as much might be stored in Schoenberg.

Ciliates Used To Detect Toxic Matter

94WS0098d Frankfurt/Main FRANKFURTER
ZEITUNG/BLICK DURCH DIE WIRTSCHAFT
in German 28 Oct 93 p 8

[Unattributed Article: "Flight Reaction Indicates Impurities—Berlin Testing Procedure Uses Ciliates for Detecting Toxicologic Substances"]

[Text] Ciliates can detect and avoid toxic substances. This behavior called chemotaxis can be used for the detection of toxic substances in contaminated water. Based on this observation, scientists at the Free University of Berlin (Institut fuer Biochemie, AG Oekotoxikologie, Ehrenbergstr. 26-28, 14195 Berlin) developed a testing system for toxic compounds dissolved in water. Preliminary studies showed that the system containing the ciliate *tetrahymena thermophila* is versatile and sensitive.

As the scientists in Berlin report, the toxic substances cause typical flight and evasive actions. The extent of the reaction depends on the substance concentration. *Tetrahymena* is suitable as a testing organism because it is an intermediate step between bacteria and higher organisms both biologically and ecologically. It plays an important role in the food chains in water. The biochemistry and physiology of the organism has been studied thoroughly.

The ciliate is used in three different test formats in Berlin. The testing apparatus basically consists of an

outer chamber, into which an internal chamber consisting of 18 measuring tubes is inserted. The measuring tubes are connected with the outer chamber by fine channels.

In the initial test phase, the organisms are in the outer chamber. The test sample is in the measuring tubes. If they contain toxic substances, the ciliates avoid the tubes, otherwise they spread to both chambers. The measured value is the number of organisms which entered the tubes.

Another test measures how the growth of tetrahymena is inhibited when agents are added. However, this test is considerably less sensitive than the chemosensory test. The change in the membrane potential due to water contamination can be studied using fluorescent compounds; the sensitivity of this test is supposed to be similar to that of the chemosensory process.

In studies with chemical substances which were selected randomly from the "European Inventory of Existing Chemicals" the test had a broad range and high sensitivity. However, the method is not suitable for continuous monitoring of the water quality.

Standards for Pesticides in Drinking Water Tightened, Ignored

94WN0073B Duesseldorf VDI NACHRICHTEN
in German No. 42, 22 Oct 93 p 29

[Article by Ursula-Schiele-Trauth: "Brussels Willing to Muddy the Water"; [Subhead lines: "EC Anti-Pollution Guidelines for Water Facing Amendment"; "In Actuality, Tighter Pesticide Limits for Drinking Water Hardly Observed"]]

[Text] Duesseldorf, 22 October 1993 (VDI-N)—Currently, the European Community's [EC] drinking water is safeguarded by quite stringent environmental standards. In reality, however, the limits on pesticides or heavy metals are observed only infrequently. It is the desire of the EC Commission to ease the requirements by amending the 1994 guidelines. The nub of the debate is the stringent limit on pesticides. The EC guideline laid down over a decade ago allows a maximum of 0.1 µg (one microgram = one millionth of a gram) of a single pesticide per liter of drinking water. If a number of substances are present simultaneously, the total pollution should not exceed 0.5 µg/l. In the final analysis, that value implies that should not be any pesticides at all in drinking water, since even using the most up-to-date methods, it is impossible to detect anything less.

Even in West Germany this stringent limit has not been upheld for a long time by all waterworks. And that is even more so the case in other EC countries. Additionally, Bonn's Federal Association of German Gas and Water Works [BGW] classifies "as serious" the number of times the limit is overstepped in the new federal

states. DM27 billion is the estimated cost of needed rehabilitation measures in this area.

The EC is now deliberating amending the drinking water guideline and likewise the anti-pollution guidelines for lakes, rivers and canals. The controversial opinions of the different interest groups surfaced at an experts meeting at the end of September in Brussels. Environmentalist groups and broad segments of the water industry want not only to uphold the stringent limits but also to apply them to ground water and surface waters. Contrariwise, some member states, farmers and manufacturers of pesticides consider the standard unrealistic.

In the future, the Commission is calling for accurate cost estimates for safeguard measures in order to assess whether the expense is still in a tenable ratio to the resulting benefits. Dr. Hans-Gerd Nolting of the Federal Biological Institute in Braunschweig summarized the results of the conference thus: "The stringent parameters for pesticides can be altered without thereby scaling back health safeguards."

It is the view of a number of observers that the total parameter of 0.5 µg/l for all pesticides will probably come down. The value for individual pesticides is disputed since it is valid only as a precautionary value. If it is overstepped, that still does not constitute any threat to the health of consumers. The EC drinking water guideline hews to the values proposed by the World Health Organization [WHO] for substances contained in water such as arsenic, chlorine or chlorinated hydrocarbons. This is the principle that the Frankfurt Farm Industry Association [IVA], representing pesticide manufacturers in the Federal Republic, is advocating also for pesticides. For the WHO's standard values are predicated on the quantities of each substance that pose no human health risk, based on current knowledge, to even infants or sick people, even if consumed daily for an entire lifetime. Practically speaking, that means different limits for individual pesticides. In the interim, the WHO has proposed such standard values for a number of pesticides that are currently in use. They are very distinct for the individual substances and are 10 to 20 thousand times the current EC rate limits.

In the opinion of environmentalist groups, while such WHO values may avoid harm to health, they still do not make any allowance for ecology. Peter Kleemeyer, spokesman for the WWF Germany environmental foundation, tosses out for consideration: "It is often only after many years that undesirable side effects show up." Too little is still known about the interactions of the by-products of the substances. Besides, higher limits for drinking water would inevitably facilitate an accumulation of pesticides in untreated waters.

Environmentalists are calling for an agriculture that systematically scales back the use of pesticides. Kleemeyer points to the Swedish model: "Since 1986 they have succeeded there in cutting the use of substances by 65 percent and, in fact, without loss of yields." In West Germany too, the use of pesticides is waning, according to the IVA, by one third per hectare since 1989.

Water supply companies are calling for limits on pesticides in ground and surface waters. For them, it is a dilemma that, while there are stringent values for drinking water, there are only inadequate requirements for protecting rivers, lakes and canals. As BGW vice-president, Dr. Friedel Baurichter, remarks: "Pollutants have a cumulative effect on water prices." The price of water has soared by nearly 20 percent in the past three years in the former federal states. In the new federal states, meanwhile, prices have already risen tenfold because of the rehabilitation measures that have been introduced.

Also of concern to the BGW are the EC Commission's proposals for the authorization of pesticides. Products that have meantime been banned in the Federal Republic are on the list proposed for EC-wide marketing: Atrazin, Simazin, Lindan, etc. Supposedly also, approval will be given even to substances for which there is still no analytical method of detection. Since 1987, when the pesticide law took effect, that has been the pre-requirement for approval in the Federal Republic. Nolting observes: "The Federal Biological Institute no longer gives approval for pesticides if values exceeding 0.1 µg/l can be expected from the substances themselves or from problematical by-products."

The EC Commission is presently deliberating tougher limits for lead contents in drinking water from the current 50 µg/l to 10 µg/l. In this case it will follow the recently established recommendations of the WHO. At present, in the Federal Republic, critical lead values can still be anticipated only in old dwellings where no one has bothered to replace the lead pipes. In the meanwhile, the lead pipes up to the house connection have been replaced area-wide. The decisions of the EC Commission and the establishment of the new limits will come about at the start of the new year at the earliest.

Institutes Improve Solar Cell Efficiency

BR2601133394 Bonn BMFT JOURNAL in German
No 93 p 8

[Text] All over the world, great efforts are being made in various directions to make wider use of solar power. In addition to solar heat collectors, which are primarily used to heat water, solar cells also make it possible to generate electrical current directly from sunlight (photovoltaics). Photovoltaics is already being widely used to generate electricity in remote areas and for small-scale applications in appliances. Photovoltaics is also being used in numerous demonstration plants in conjunction with mains electricity. The electricity from main-connected photovoltaic systems still costs about 10 times as much as conventionally generated mains electricity. Of the several approaches being explored in an attempt to lower the cost of photovoltaics, it is considered that the scientific quest for more effective solar cell materials and the development of cheaper production methods hold out the best prospects. High-absorption thin-film solar cells and novel production processes involving

cost-saving material deposition onto a substrate take on particular significance in this respect. The Berlin-based Hahn-Meitner Institute, working with the University of Stuttgart's Institute of Physical Electronics, has recently achieved a significant improvement in efficiency in a thin-film solar cell made of copper, indium, and sulfur. This sulfurous material is largely environment-compatible. The efficiency of this novel solar cell was raised to 10.2 percent—in natural daylight and without further optimization in the form of, for example, an antireflection coating.

This material's theoretical efficiency exceeds the maximum performance of silicon. The thickness of the absorber layer, which has a direct bearing on production costs, needs to be only three-thousandths of a millimeter, so copper-indium disulfide has great development potential. It was possible to raise the degree of efficiency in the new cells because the vapor deposition process produces copper-rich photoactive material with a high sulfur surplus. An improved "window material" used as a transparent, conductive contact layer also contributed to this positive result.

NETHERLANDS

Wind Energy Bureau To Open

BR2601111694 Rijswijk POLYTECHNISCH
WEEKBLAD in Dutch 17 Dec 93 p 1

[Text] Next year the Netherlands will have a National Bureau for Wind Energy. This independent institution will promote the application of wind energy and provide scientific information. A location for the bureau has not yet been decided. The initiative comes from the Organization for Lasting Energy [ODE], the Netherlands Association for Wind Energy [Newin], and the Netherlands Energy and the Environment Company [Novem]. "The Bureau should partly assume the work which was formerly done by Newin and ODE separately," says Mirjam Tielen, staff member from ODE. Novem, together with industry, supplies the funding of the bureau.

Energy, Environmental Aid Provided to Bulgaria

BR2401155094 Rotterdam NRC HANDELSBLAD
in Dutch 22 Jan 94 p 18

[Article by Theo Westerwoudt: "Netherlands Helps Bulgaria Solve its Energy and Environmental Problems"]

[Excerpts] Zoetermeer—"The Netherlands is aiding us with technology and with major showcase projects that are helping us to solve our energy and environmental problems," says Bulgarian Deputy Environment Minister Evgeni Angelov enthusiastically. "I am extremely grateful for this cooperation."

Angelov is visiting Energy & Environment Netherlands (E&EN) in Zoetermeer, the organization set up two years ago to help Netherlands companies secure contracts within the context of aid for Central and Eastern Europe.

Over the past few days, he has established contacts for projects concerned with the improvement of gas supplies, the generation of electricity, coal vaporization, the cleaner combustion of lignite, and technological training in his country.

Bulgaria relies heavily on Russian supplies of natural gas, nuclear energy, and lignite for its energy requirements. Lignite is the only energy source that is amply available in Bulgaria, but the processing and combustion thereof cause tremendous environmental pollution, forming dust and emitting sulfur into the atmosphere. Consequently, Deputy Minister Angelov is enthusiastic about the new technology that the Rotterdam-based company Ecofire is implementing at a lignite mine to the northwest of Sofia, the Bulgarian capital, following arbitration by the Ministry of Economic Affairs and E&EN. "The pilot project that Ecofire is putting into practice in conjunction with us is working superbly. I hope that it will rapidly be extended on a commercial scale, because we want to comply with Western environmental standards as soon as possible." [passage omitted]

Over the past few days, Angelov has also signed a contract with several Netherlands companies covering technological training for Bulgarians who are going to set up a gas distribution system in his country. A next step, which could also mean orders for the Netherlands, will involve the construction of pipelines, control equipment, pumps, and compressors. The engineer Hans de Ruiter, the CEO of E&EN, believes that Netherlands energy companies like Gasunie, and the major distribution companies in this sector can do far more to conquer a share of the East European market. "Look at what British Gas, Gaz de France, and German companies are doing in Hungary, Poland, and the Czech Republic. They pay for the first feasibility studies and then receive contracts as a matter of course." De Ruiter believes that the shareholders of Gasunie—Shell and Esso—are clinging to the brakes. As a result, the ideal envisioned by Prime Minister Lubbers, who saw a leading role being set aside for Netherlands companies with his energy plan for Eastern Europe, is only materializing slowly.

Probably together with the Delft-based company Hagoort, Gasunie will advise Bulgaria on the storage of natural gas in an empty gas field to the north of Sofia. Bulgaria urgently needs a buffer of this kind, because the supply of Russian gas is being interrupted due to technical or political problems. [passage omitted]

Authorities Seize French Ship for Polluting Beaches

AU2001192494 Paris AFP in English 1809 GMT
20 Jan 94

[Text] The Hague, Jan 20 (AFP)—A French container ship has been seized and its owners asked to pay \$2.6 million compensation after thousands of sachets of toxic pesticide were washed up on Dutch beaches, officials said Thursday [20 January].

Transport ministry officials said the French-registered Sherbro (eds: correct) had been docked at Amsterdam since Wednesday evening following the discovery of the sachets during the day Wednesday.

The sachets, which the ministry said were lost overboard in December, contained two highly toxic agricultural fungicides. The substances can be fatal if inhaled or ingested and can seriously damage the eyes in case of contact.

A ministry spokesman said the Sherbro was identified with the help of the Lloyd's register of ships. The Sherbro is owned by SCAC Delmas-Vieljeux, based in Dunkirk, and is insured by the British company P and I.

The Sherbro lost 88 containers containing 500,000 sachets last December 8 and 9, while weathering an overnight storm off the French coast. Thousands of sachets have already been washed up on French and Belgian beaches.

Delmas's representative here said the ministry was claiming five million florins (about \$2.6 million) in compensation to pay for the clean up operation.

The worst of the pollution discovered Wednesday occurred near Amsterdam, the ministry said. Most beaches along the Dutch coast were affected but most of the sachets were found at Velsen and Ijmuiden near Amsterdam.

Police sealed off the beaches on Wednesday night and clean-up teams, equipped with protective clothing and goggles, began cleaning up the beaches on Thursday morning.

In some spots there were six sachets per square meter (yard), the ministry spokesman said.

Clean up work should take two days, the spokesman said, declining to estimate the cost. He added that two cigarette-box size objects had also been found near Amsterdam, also from the Sherbro.

They were being investigated to determine whether they were detonators, he said.

The Dutch subsidiary of Swiss chemicals giant Ciba-Geigy offered to cooperate in the operation, offering to transport the recovered sachets and dispose of them in a specialised plant near Rotterdam.

It said it too would seek payment for its services from the container ship's owners, or their insurers.

Experimental Water Purification Plant Introduced

BR3101131294 Rijswijk POLYTECHNISCH
WEEKBLAD in Dutch 17 Dec 1993 p 3

[Article by Bart Stam: "Heemstede Is Experimental Garden For Biological Water Purification"]

[Text] Heemstede—After three years' research, the Hoogheem council of the Rijnland area regards the time ripe for the introduction of a new water purification technology. This will take place in Heemstede, where phosphates will be removed from the water using a combination of biological dephosphatization and a granular reactor. The equipment will cost 7 million guilders to install.

The Heemstede Water Purification Plant (AWZI) is a demonstration model. Should the test unit meet expectations, then the Hoogheem council is considering building more of these dephosphatization plants. "That depends on the experience we build up in Heemstede over the coming year," says P. Knaapen, head of Rijnland's purification technique department in Leiden. "We are checking whether it meets expectations with regard to phosphate purification. And we are also taking account of aspects like control, maintenance and the definitive size." The Heemstede unit is based on a scale model which Rijnland has tested since 1990 in three water purification plants. This mini-plant can be transported in a container. In Zuid-Kennemerland it is the first time that the purification method will be used at real size.

Algae Growth

When phosphates enter water, they cause an increase in the number of nutrients in the water (eutrophication). This in turn causes a massive growth in algae, so that the amount of oxygen in the water declines. The main sources of phosphates in water are households (kitchen waste and feces) and agriculture (fertilizers). The contribution caused by washing powders is declining because many manufacturers have switched to phosphate-free products.

The AWZI in Heemstede already had a biological purification process. However, the equipment to remove the phosphate from the mass of bacteria—the purification sediment—is a new element. Its main advantage is that it does not increase the quantity of purification sediment. When oxygen is added, the micro-organisms absorb the phosphates. Rijnland continually separates off part of the sediment and adds acetic acid. While the bacteria absorb the acid as nutrients, they give off the phosphate again. This leads to water which is rich in phosphates and sediment which contains virtually none.

The next step is separating sediment and water. The Hoogheem council has chosen a centrifuge to do this. After the separation process, the sediment returns to its own purification process to once again absorb phosphates. At this stage the effluent contains virtually no phosphates. On the other hand the phosphate-rich water from the centrifuge must undergo two more processing stages.

The first processing stage is the addition of sulfuric acid to the water. This removes the carbonate from the water. This is necessary because this substance can block the following phase of the process, the granular reactor. The

granular reactor was developed by the DHV engineering company in Amersfoort and enjoys an international reputation.

Large Granules

Once the water has been pumped into the granular reactor, limewater is added to the centrifuge effluent. A deposit of calcium phosphate then forms from the limemilk and phosphate. The water goes from the bottom to the top of the reactor several times. The granular reactor contains grafting sand. The calcium phosphate attaches itself to the grafting sand and forms phosphate granules. The result is obvious: the granules become bigger and eventually drop to the bottom due to their weight. Here they are removed. The purified water is returned to the oxygenation tank.

The AWZI in Heemstede is one of 45 water purification plants in Rijnland. The aim of the plant is to help the Hoogheem council in the fight against phosphate. Rijnland calculates that in 1995 it will have to process some 900 tonnes of phosphates. This figure is based on the assumption that there are no increases in phosphate use.

NORWAY

Toxic Waste From Continent Greatest Threat

94WN0130A Oslo AFTENPOSTEN in Norwegian
17 Dec 93 p 2

[Article by Ole Mathismoen: "SFT Fears Hidden Environmental Catastrophe"]

[Text] Norway's Pollution Authority [SFT] fears that the tolerance threshold for environmental toxins will soon be reached in Norway.

"We are concerned. There are enormous gaps in our knowledge about the effects of environmental toxins. We know they are extremely toxic even in small quantities and that they become concentrated in the food chain and in nature because they fail to break down," said SFT Director Harald Rensvik.

Yesterday SFT published its new comprehensive report on environmental toxins in Norway. The previous one came out six years ago.

The main conclusions are clear: Norwegian emissions have been radically reduced since 1985. In the case of many environmental toxins, industrial spillage into the waterways has been reduced by more than 90 percent. Nevertheless, environmental toxins are a greater threat to nature and the health of Norwegians than ever before. The problem is that, once emitted, pollutants remain in nature, and with the constant influx of toxins from abroad, environmental authorities fear that the tolerance threshold will soon be reached. Although unable to predict what will happen, where it will happen, or when,

environmental authorities know that serious environmental problems are developing in the natural world around us.

We receive greater quantities of many of the most dangerous environmental toxins from abroad than we produce ourselves. The major portion is carried on the air and wind from power plants and industries on the continent. Some also come on the ocean currents.

"Approximately four tons of cadmium is dumped on the Norwegian environment each year. Three of these come from other countries, while our own emissions account for just one ton. The proportions are similar for other toxins," said Rensvik.

SFT says in its report that the work of reducing Norwegian emissions must continue. "We used the easiest and cheapest methods. The percentage that remains must also be eliminated if the fjords and nature areas ruined by Norwegian pollution are to be completely restored. There is still a long way to go before crabs can be fished out of the Frie Fjord. But it is entirely within the realm of possibility to get there," Rensvik said.

While most Norwegian toxic waste has a concrete source that can be identified and cleaned up, it is harder in the case of foreign pollutants. Norwegian pollutants harm one end of a fjord or the flora and fauna of a limited region. Pollutants from abroad are spread over the entire country by means of rain, wind, and ocean currents. This means that the authorities have limited knowledge of how long it will be until nature's tolerance threshold is reached:

"In terms of climate, the Norwegian environment is in grave trouble. We fear that unforeseen harm can arise as a result of constantly increasing amounts of cadmium, mercury, and other environmental toxins that are out there," said Rensvik.

The director of SFT points out that scientists know too little to say what will happen on the day the tolerance threshold is exceeded. But Rensvik can mention several possibilities: severe poisoning, species that become extinct, species that have problems with reproduction, mutations, injury to the nervous system. Because substances are concentrated in the food chain, they can affect people through eating such things as reindeer meat.

"We conclude that Norway must continue to work for further reductions both at home and abroad. Because even though our own emissions have been cut down, the danger to Norway's natural resources has not been dramatically reduced," said Rensvik.

The report reveals that scientists have discovered disturbing amounts of the environmental toxins PCB [polychlorinated biphenyl] and PAH [expansion unknown] in the Skagerrak trough and the Norwegian channels, in addition to the known quantities of imported pollutants.

Recent investigations have also evidenced high concentrations of PCB's in the fatty tissues of polar bears and Arctic foxes on Spitzbergen. It is believed that PCB's can lead to a reduced capacity to breed, a weakened immune system, and behavioral disturbances—especially in sea mammals. The toxins congregate far from the source, and the effects of this are unclear.

The reason why advisories have been issued to those who eat fish and shellfish caught in the fjords is because of earlier toxin emissions from Norwegian industries. For some of these fjords, the restrictions have been reduced. In the meantime, they have been expanded somewhat in other areas because new and better studies have been done.

Prime Minister Defends Whaling Stance

PM2601153894 Oslo AFTENPOSTEN in Norwegian
21 Jan 94 p 5

[Morten Fyhn report: "Warm Defense of Whaling"]

[Text] Strasbourg—Yesterday Gro Harlem Brundtland defended Norwegian whaling in a heated showdown with opponents in the European Parliament.

"There is a logic in our arguments, and that is something that they must understand," a pugnacious Norwegian prime minister said after a short and intense debate with the many friends of the minke whale at an open meeting with the European Parliament. But the Members of the European Parliament [MEPs] did not allow themselves to be convinced in any way by Norway's well known scientific arguments regarding whaling. For them this is and remains a question of emotions and morals.

Whaling became a central topic when the MEPs were able to put questions. But none of them threatened to vote against Norwegian EU [European Union] membership if hunting of the minke whale continues. On the contrary, a large number of the critics of whaling said that they would very much like to have Norway as a member of the EU.

The parliament's criticism of whaling was chiefly voiced by British animal lovers—both Conservative and socialist.

Norwegian seal hunting is also a popular hate issue in Strasbourg, and several MEP's mentioned the use of clubs on innocent seal cubs. Nor could they understand why Norway wants to sell sealskins.

Prime Minister Harlem Brundtland was both well prepared and ready for action yesterday. She lectured the gathering on what will happen if we start to make emotions instead of scientific arguments the basis for international decisions on the defensible management of animal species. She admitted that it would be much more pleasant for Norway to give in, but made it clear that there can be no question of this.

"And why do we want to sell sealskin? Because we believe that we have a logical and a good ecological policy," she said. However, the prime minister seemed to be hinting that this is a demand that Norway could give way on in the negotiations with the EU: "We will have to wait and see what we can achieve," she said.

In her introductory remarks to the MEP's the prime minister gave a detailed account of why Norway has applied for EU membership. She assured them that Norway is working hard to be able to complete the negotiations before the March deadline that has been set so that the European Parliament will be able to debate and vote on the outcome of the negotiations in May, and said that after that Norway will need five to six months to prepared a referendum.

SPAIN

Spanish Company Begins Complete Recycling of Cars

94WN0105A Madrid EL PAIS in Spanish 27 Nov 93
p 6

[Article by Isabel Fernandez: "Firm in Mejorada Begins Pilot Experiment To Recycle Cars"; introductory paragraph in boldface as published]

[Text] Mejorada del Campo—The municipality of Mejorada del Campo is home to the only firm in Spain that completely recycles automobiles. The pilot experiment, which began three months ago, consists of cannibalizing every component from tires to steering wheel while eliminating polluting materials. The firm doing the work is thereby achieving one of the goals of the National Automobile Manufacturers Association.

"The experiment is turning out to be more worthwhile than expected and less expensive than predicted," says Jorge Aladro, coordinator of the system at the Reyfra (Recycling and Wrecking) firm in Mejorada del Campo (population 16,000).

It is estimated that from 700,000 to 800,000 vehicles are scrapped every year in our country. After being stripped of their marketable parts and components, those vehicles undergo a partial recycling process that leaves behind a large amount of scrap, with the further difficulty that since the vehicle was not decontaminated first, it becomes a source of pollution.

The complete recycling of automobiles that is now being offered includes the stages of collection, decontamination, disassembly, and crushing. Each of those stages has in view certain objectives which, depending on economic profitability and technical possibilities, may or may not be incorporated into future practice and habits.

For example, a basic feature of the first phase is the establishment of an automobile collection system that will eliminate the current practice of removing cars after

they have been crushed, since that makes it impossible to extract various usable components.

To begin with, it will be necessary to adopt regulations requiring that the final owner turn in his vehicle at one of a number of specific locations. Those locations will be the only ones authorized to issue the "delivery certificate" enabling the owner to stop paying taxes on the car.

Aladro says that for decontamination, Reyfra "uses a system never before seen in Spain: one that eliminates the pollutants (oils, brake fluid, CFC's, and so on) and keeps them from entering the atmosphere. Those pollutants are then recycled or processed by authorized agents."

Once decontaminated, the vehicle enters the disassembly phase. The glass could be reused, resulting in an estimated savings of 130 kg of fuel oil per metric ton of recycled glass.

The sulfuric acid from batteries is converted into lead-free calcium sulfate, thus becoming a nonpolluting waste product.

The scrap, with the acid removed, is broken down into its component parts by crushing. The final result is inert slag and lead that is pure enough to enter the production cycle of that metal.

Lastly, the car is broken up and the various metals are separated and sent to the steel industry for reuse.

This pilot experiment differs from those carried out in Europe in that it is the first to include all automobile manufacturers and has the cooperation of associations in that industry. Those associations are very necessary, since the networks for reuse and marketing depend upon them.

UNITED KINGDOM

Development Effect on Environment To Be Studied

94WN0118 London THE SUNDAY TELEGRAPH
in English 12 Dec 93 p 16

[Excerpt] The Government is facing a testing scrutiny over its environmental policies with the setting up of a new committee by the House of Lords to monitor its strategies for "sustainable development," writes Greg Neale, *Environment Correspondent*.

The Lords is to set up the ad hoc committee in the New Year. It will have as its remit to consider the Government's report to the United Nations—due by the end of the year, but not now expected to be published until mid-January—on its strategies for making economic development environmentally sustainable.

The new Lords committee, with powers to call for evidence from across the range of Government departments, is likely to give a close scrutiny to ministers'

plans. Several leading members of the Upper House are keenly interested in the topic and are expected to home in on any policy inconsistencies between departments.

The concept of sustainable development has become a blueprint in recent years in international circles. The Bruntland report, prepared by the 1987 World Commission on Environment and Development, chaired by the Norwegian Prime Minister, Mrs. Gro Harlem Bruntland, defined the concept as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The policy attempts to integrate concern for industrial and economic development, particularly in the Third World, with the need to care for the environment. It therefore links government and intergovernmental strategies on such topics as economics, transport, trade, energy and industry with issues such as public health and conservation and care for the environment.

Britain agreed at last year's United Nations "Earth Summit" in Rio de Janeiro to present its strategy plans by the end of this year to the new UN Commission on Sustainable Development. Earlier this year, John Gummer, the Environment Secretary, published a public consultation paper on the subject, but officials say the Government's report has been delayed by the November Budget, when measures such as taxing domestic fuel bills were introduced. The Government hopes that such measures will help it meet its international treaty obligations to cut emissions of carbon dioxide and other gases that contribute to changing the Earth's climate.

Launching his consultation document, Mr. Gummer said that the essence of sustainable economic growth was that "we cannot pay for our development out of our children's purses." He added: "Sustainable development simply means growing in ways for which future generations will thank us. It does not mean being against development. That would do our grandchildren no favours. It means instead developing in such a way that we respect the delicate balances on which our lives depend." [Passage omitted]

EC Water Pollution Standards Easing

94WN0117 London THE DAILY TELEGRAPH
in English 14 Dec 93 p 6

[Article by Charles Clover and George Jones]

[Text] Britain will be allowed to delay or relax EC pollution standards for drinking water, bathing beaches and rivers.

Mr. Major confirmed in the Commons last night that the European summit in Brussels had agreed to repeal the 10-year-old bathing and drinking water directives and replace them with less intrusive regulations, enabling "broad, general standards" to be applied at national level.

Seventeen EC directives have been withdrawn or amended in the purge of legislation, part of an Anglo-French initiative to apply the principle of "subsidiarity" to laws which gave Governments little flexibility.

Two key EC directives on water quality remain in force: one aimed at reducing pollution from nitrates and another on urban waste water treatment, which Mr. Clarke, Chancellor, said recently would cost Britain £10 billion to implement instead of the original estimate of £2 billion.

According to Mr. Yeo, Environment Minister, water bills—forecast to rise by up to £100 by the end of the century in some areas—would now rise more slowly.

Mr. Major said other Governments were listing EC laws to axe. "We are determined to maintain high standards, but we are determined, too, to simplify European legislation, to make it less intrusive and leave more room for national choice."

However, officials stressed that the extent to which Britain would be allowed to relax standards for drinking water was not clear, as new directives had to be agreed in the spring.

"We cannot repeal EC laws simply because we think the standards are set too high," said one. "The aim is to simplify decision-making and meet the Maastricht Treaty requirements that as much legislation as possible is conducted at national level unless it can be shown that it would be more effective at EC level."

The cull of EC directives has been led by Mr. Major and Mr. Clarke, against the advice of Mr. Gummer, Environment Secretary, who has said it would be politically unpopular to be seen dismantling EC pollution controls.

Ministers argued yesterday that there would not be a fall in Britain's standards.

Mr. Yeo said the Government would be using the new flexibility to determine its own standards for drinking water, incorporating the latest advice from the World Health Organisation on relaxing the standard for some pesticides. Britain provides water in excess of the present EC pesticides standards to 14.5 million people. The WHO recommends, however, a five-fold tightening of standards for lead, one of the most toxic substances.

Mr. Yeo said: "I see it as part of my job to protect consumers against the extraordinary demands of some of the Green lobbies, who have the Brussels bureaucrats totally in their power and who are pressing ahead with demands for improvements which have no scientific or medical basis at all."

"We do not want to waste money on things that have no benefit to the consumer."

Mr. Chris Smith, Labour environment spokesman, called the legislative changes a disaster. "This is a smokescreen for saying the Government wants lower

standards because they want lower costs. What this represents is a major step away from the fight against pollution."

Mr. Andrew Lees, campaigns director of Friends of the Earth, said: "The idea that the British Government can be trusted on its own to ensure compliance with the highest standards to protect the quality of our rivers or drinking water is a joke."

Major Launches 'Green' Action Plan for Environment

PM2601142294 London *THE DAILY TELEGRAPH*
in English 26 Jan 94 p 2

[Charles Clover article: "Major Warns of Pain in 'Green' Plan for Britain"]

[Text] The Prime Minister gave warning of "painful political action" to protect the environment at the launch yesterday of a "green" action plan that promises higher fuel taxes and a city curb on cars.

The Government's followup to the Rio Earth Summit, an environmental action plan for the next 20 years, runs to four documents—nearly 600 pages, announced by nine ministers in the surroundings of Inigo Jones's Banqueting House in Whitehall.

The most controversial chapter of Britain's Sustainable Development Strategy, on transport, says that "costs of travel, particularly costs of road travel, may well have to rise to reflect environmental costs and to affect levels of future demand for transport."

Mr. Major, launching the strategy, said: "Sometimes quite painful political action may be necessary to meet environmental objectives." He admitted he "did not expect to see people dancing in the street" at the thought of road pricing.

He said that Britain's imposition of VAT [value-added tax] on heating and lighting, higher fuel prices and commitment to road pricing had already gone further than most other countries, but denied these would impose an intolerable burden on the economy.

An expansion of nuclear power might be necessary to meet future environmental commitments, he hinted. Alongside the overall environmental strategy, Major introduced the following documents:

The UK Climate Change Programme—sets out in detail how Britain intends to meet its commitments to freeze carbon dioxide emissions by the year 2000.

The document shows for the first time that Britain will achieve a reduction in all gases that cause global warming—including methane and CFCs [chlorofluorocarbons]—of five percent. It commits Britain to setting targets after 2000 but not what they will be.

The Biodiversity Action Plan—sets out 59 specific commitments to protecting wildlife and local distinctiveness

The Forestry Action Plan—shows how Britain will increase forest cover.

Mr. Major announced a new panel of five "wise men" who will advise him and monitor progress on "green issues," chaired by Sir Crispin Tickell, warden of Green College, Oxford, an unofficial adviser at Downing Street.

The others are Lord Alexander of Weedon, chairman of National Westminster Bank, Lord Selborne, chairman of the Government's statutory conservation watchdog, the Joint Nature Conservation Committee, Sir John Houghton, chairman of the Royal Commission on Environmental Pollution and Dr. Anne McLaren, vice-president of the Royal Society

Mr. Gummer, Environment Secretary, announced that the Government would be setting up a Round Table on Sustainable Development which would bring together industry, local authorities and environmentalists to discuss environmental policies.

The Government also intended to stimulate a new "citizen's environmental initiative" in consultation with local authorities, churches and community groups.

Mr. Major's initiative received a chorus of criticism from Opposition MPs and environmental groups. Mr. Chris Smith, Labour spokesman for environmental protection, said the four reports contained "no vision and few firm commitments to action."

The Liberal Democrat environment spokesman Simon Hughes said the key Strategy document was "full of 'coulds', 'ifs' and 'maybes' when what the country needs is 'whys', 'whats' and 'whens'."

The Green Party complained the Government "lacked the courage of its convictions" and the WorldWide Fund for Nature described the announcement as "a lost opportunity."

Finnish, Norwegian Environment Aid to Russia, Estonia Compared*94WN0114B Helsinki HELSINGIN SANOMAT
in Finnish 20 Nov 93 p 18*

[Article by Jukka Perttu: "Collaboration With Norwegians Produces Results More Quickly"]

[Text] Researcher Anatoly Vinogradov of the Kola Science Center criticizes the Finns not being action-minded when mutual efforts are made to solve Kola Peninsula environmental problems. "Working together with the Swedes, but especially the Norwegians, produces results much more quickly," compared Vinogradov.

He gave a presentation at the Foreign Policy Institute seminar on Friday [18 November]. The theme of the seminar was environmental cooperation in Finland and neighboring areas. Experts from Norway, Finland, Sweden, Estonia, Russia, Germany, and Japan had convened at the Gustavelund Convention Center in Tuusula.

Vinogradov's criticism was that much is promised at the government level, but then at the company level, profits are sought. He also presented a colorful environmental magazine that has been created as a joint project of Kola-Norwegian-Swedish cooperation.

Vinogradov argued that pollution in Kola does not harm the environment in Norway and Finland.

Ilkka Luotamo from the Ministry of Foreign Affairs borrowed Vinogradov's map and used an overhead projector to present it to the audience. The immense environmental problems in the St. Petersburg area and Karelia will also demand Finnish resources. Norway's

interest, on the other hand is in the Kola Peninsula, where the boundary between the two countries is, Luotamo pointed out.

Researcher Heidi Hiltunen disputed the assertion that pollution coming from the Kola Peninsula would be harmless to Lapland.

According to Vinogradov, there are too many people in the Kola Peninsula when compared to the tolerance capacity of the environment—the density of population is many times greater than in Lapland. For that reason, relocating retirees, for example, in the south, in the St. Petersburg region among other places, has been begun. Between 10,000 and 20,000 people move south from the Kola Peninsula annually.

Finland Is Primary Source of Support for Estonia

"At this point Finland is the greatest provider of environmental support for Estonia," said director Tonis Kaasik of the Tallinn department of the Stockholm Environmental Institute. Almost all of the investment help in environmental matters has come from Finland.

The Nordic countries have divided the region into zones of responsibility, and aiding Estonia has been given to Finland.

Of foreign environmental aid, half has gone into protecting water resources, and about one-fifth into protecting the atmosphere.

When Finland, Sweden, and Denmark invest in cleaning up the water in Estonia, this investment reduces the pollution burden on the Baltic Sea more efficiently than if the same amount were used somewhere in the Nordic countries.

Distribution of Environmental Aid Received by Estonia in Millions of Markkas

	Investments	Research	Training	Other	Total
Finland	42.84	3.47	3.67	0.14	50.12
Denmark	—	17.85	3.90	—	21.75
Sweden	0.13	10.29	0.13	—	10.55
United States	—	3.53	—	—	3.53

Russian Nuclear Plant To Suffer Without Finnish Spent Fuel*94WN0114A Helsinki HELSINGIN SANOMAT
in Finnish 4 Dec 93 p 7*

[Article by Johanna Mannila: "Compensation Payment Would Improve Things in Contaminated Chelyabinsk"]

[Text] "Much will be left undone in Chelyabinsk if the compensation being paid by Finns ceases," Anders Palmgren, director of Imatra Power, says critically about the government's decision last week to stop the shipment of nuclear wastes to Russia.

The spent fuel from Loviisa is taken into the southern Urals, to Chelyabinsk. The area was badly polluted during the 1950's when defense industry enterprises dumped nuclear wastes directly into a nearby river and lake.

Imatra Power has paid and continues to pay tens of millions of markkas for every shipment of fuel to Russia. "Besides for the treatment of the fuel, the money is used for technical improvements in equipment and in cleaning up the damages to the environment from the military activity era," says Palmgren.

Western Equipment Cannot Be Obtained Without Foreign Currency

"With government decisions, Finland could stipulate that the treatment of spent fuel in foreign countries be done in a safe and environmentally noninjurious manner. The stipulation could include the provision that Finnish authorities will inspect the safety of the operation," Palmgren suggests as an alternative to the export ban.

"Finland should have no philosophical basis for banning the exportation of spent fuel if Finnish authorities could inspect the safety of the treatment."

The leadership at the Radiation Safety Center is in agreement with this in the letter that it sent to Minister of Trade and Industry Seppo Kaariainen (Center Party). Head director Antti Vuorinen sums up the contents of the letter by stating that conditions at Chelyabinsk would become even worse than currently if the payments made by Imatra Power were to cease. "Without foreign currency, Mayak, Inc., could not obtain western equipment."

Maintaining Collaboration Worthwhile

In the opinion of the Radiation Safety Center, it is in Finland's best interests to continue and expand the well-begun collaboration with Russian nuclear safety authorities. "The Imatra Power payments also serve to downscale the nuclear weapons industry in Chelyabinsk, and to transfer the personnel working in the area into peaceful purpose oriented jobs."

Vuorinen also reminds that civilian officials in Russia need Finnish support for taking care of the area and that the region was closed to Russian civilian officials up until last year.

According to the Radiation Safety Center, it is realistic for Finland to expect, over the long term, Russian technical competence and know-how to be able to also improve the safety of the burial of the Olkiluoto nuclear waste. In any case, Russia has to solve a much more extensive problem than Finland's in the ultimate storage program.

"If the exporting to Russia ceases, it will mean the actual reduction of cooperation between our two countries in the field of treatment of nuclear waste. At the same time we lose our chance to have an impact on the safety of nuclear waste treatment in the Chelyabinsk region and on the environmental cleanup of that region," fears Vuorinen.

Efficiency Inspection in January

Experts from the Radiation Safety Center will join Russian nuclear safety authorities in focusing on Chelyabinsk in January. During this technical visit, the radiation conditions of the region, as well as the safety of nuclear waste treatment will be mapped.

The agreement between Imatra Power and the Russians about the returning of fuel is in force with a noncancelability clause for as long as the Loviisa power plant is in use. The conditions of the agreement have been re-examined at five-year intervals. Current conditions are in force until 1996.

"If no agreement on the returning of fuel is reached in 1996, Imatra Power will continue to have the right to return spent fuel for three more years, but at a higher price," says Palmgren.

If Finland decides to not abide by the agreement, Imatra Power will have to pay compensation to the Russians.

Minister of Trade and Industry Seppo Kaariainen will soon decide what kind of committee will be named to study ways to stop exports. Jussi Manninen, the negotiating civil servant of the Ministry of Trade and Industry, estimates that the committee will arrive at a recommendation in a couple of months.

About Three Percent

About 3 percent of spent fuel is of the longest lasting and most dangerous variety of waste, the ultra-active waste.

If spent fuel is placed in final storage in Finland's bedrock, it will all be ultra-active waste.

Industrial Power, Inc., intends to bury fuel from the Olkiluoto reactor into bedrock, and Imatra power will do likewise if exports cease.

The spent fuel that has been taken from Loviisa to Russia has undergone a retreatment process in which the ultra-active waste is separated from uranium and plutonium that can be recycled. Retreatment is a common procedure also in France, Japan, Great Britain, and the United States.

In Russia, the uranium extracted from the fuel is used in the manufacture of fuel for Chernobyl-type RBMK reactors. The plutonium has temporarily been put in storage because the manufacture of plutonium fuel, due to its high toxicity, requires a much more advanced technique than the manufacture of uranium fuel.

The remaining ultra-active waste has been melted into a very stable, glassy mass.

The possibility that Finland would do the retreatment has been considered nil, because the plants are expensive and require more operational volume than provided by Finland's nuclear program.

END OF

FICHE

DATE FILMED

19 APR 1994